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CIREAL COURTER

Official Lessenger of the Office of Gereal Grops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

PERSONNAL ITELS

Miss Helen R. Getty, stenographer in corn investigations since May, 1922, was transferred, effective January 2, 1930, to the field service of the Food, Drug, and Insecticide Administration in New York City.

Dr. L. R. Jorgenson resigned his position as assistant agronomist and agent in the corn-breeding investigations cooperative ith the Chic Agricultural Experiment Station and the Chic State University, on December 31, 1929.

Mr. B. M. King, agent in charge of rice investigations conducted at Elsberry, Mo., in cooperation with the Missouri Agricultural Experiment Station, who came to Tashington the latter part of December, left for Columbia, Mo., on January 11.

Mr. Fred C. Leier, formerly extension pathologist, Office of Cooperative Entension Nork, Extension Service, has been placed in charge of barberry eradication. The barberry-eradication unit, which has been a part of the Office of Cereal Crops and Diseases since 1910, was separated from the Office on January 1, 1930, and organized as a separate office of the Bureau.

Mr. G. H. Stringfield, who was appointed, effective December 10, agent in the cooperative corn investigations in Chio, came to Washington on January 4 for conferences with administrative officials regarding the progress of cooperative experiments. He left on January 11 to return to his headquarters at Wooster, Chio. 19

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VISITORS

Mr. H. B. Derr, county agent for Fairfax County, Virginia, was an Office caller on January 9. He was interested in obtaining specimens of cereal smuts for use in county exhibits.

MANUSCRIFTS AND PUBLICATIONS

L A manuscript entitled "A Manual of Bacterial Plant Fathogens," by Charlotte Elliott, was approved on Movember 4, 1929, and submitted on January 7, 1930, to The Williams and Wilkins Company, baltimore, Md.

Galley proof of article entitled "Inheritance of the Second Factor for Resistance to Bunt, <u>Tilletia tritici</u>, in Hussar Wheat, by <u>F. N. Briggs</u>, for publication in the Journal of Agricultural Research, was read on January 14.

The article entitled "Relation of Stomatal Behavior to Stem-Rust Resistance in Wheat," by <u>Helen Hart</u>, appears in the Journal of Agricultural Research 39(12): 929-948, figs. 1-3, December 15, 1929. (Cooperative investigations between the Office of Cereal Crops and Diseases and the Minnesota Agricultural Experiment Station.)

FIELD STATION CONDITION AND PROGRESS

(All experiments except those conducted at the Arlington Experiment Farm, Rosslyn, Va., are in cooperation with State agricultural experiment stations or other agencies.)

HUMID ATLANTIC COAST AREA (South to North)

GECRGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NET YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, W. T. Craig)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)
(Jan. 3)

The weather in December was very unsettled. Rain fell on 11 days, resulting in a total precipitation of 5.50 inches. There was a flurry of snow on the 1Sth; much of the precipitation on the 21st was in the form of sleet. During the day and night of the 21st, rain and sleet continued to fall, while the temperature remained at freezing or below most of the time, resulting in the formation of ice on all exposed objects.

This coating of ice reached a thickness of more than an inch on objects with a northern exposure. There was very little melting of this ice before the afternoon of December 23. In shaded places the ice remained on the ground until the 26th. During this period the temperature went as low as 20 degrees F., and freezing temperatures were recorded each night from the 19th to the 25th, inclusive. The ice did much damage to trees and telephone and telegraph wires and poles. It is estimated that normal telephone service in this section can not be restored in less than three weeks.

This freezing condition extended to a line about 25 miles north of Crowley. Beyond this distance the precipitation apparently was in the form of snow. In traveling through this section several days later it was noted that all of the leaves and tender portions of citrus and other evergreens were completely killed. To the south this condition did not exist. Apparently trees that were coated with ice were protected from the low temperatures. The leaves on these trees, however, are likely to fall, but the resent indications are that only a few of the tender portions will die.

Very little farm work was done in December. Some farmers were able to plow portions of sod land. Work on the Station comprised mainly the cleaning of ditches, recleaning of seed rice, and the building of a lean-to on each side of the barn to protect work animals in bad weather.

Mr. Jenkin T. Jones, superintendent of the Biggs Rice Field Station, Biggs, Calif., was a visitor on December 14.

Agricultural Experiment Station, Baton Rouge (Corn Breeding, E. F. Stoneberg)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Layer)

LISSOURI

Agricultural Experiment Station, Columbia (Gereal Agronomy, L. J. Stadler)

- .1.

OHIO

Agricultural Experiment Station, Wooster (Corn Investigations, G. H. Stringfield)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, H. C. Murphy)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, LaFayette (Corn Rots and Metallic Poisoning, J. F. Trost, Acting in Charge)

Purdue University Agricultural Experiment Station, LaFayette (Leaf Rusts, E. B. Mains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Faul (Wheat Breeding, E. R. Ausemus)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flam Rust, H. A. Rodenhiser)

GREAT FLAIMS AREA (South to North)

OKLAHCMA

Woodward Field Station, Toodward (Grain Sorghum and Broomcorn, J. B. Sieglinger)

MAISAS

- Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker,
- <u>Agricultural Experiment Station, Manhattan</u> (Corn Breeding, L. M. Brunson)
- Agricultural Experiment Station, Lanhattan (Wheat Foot Rots, Eurley Fellows)
- Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. C. Johnston)
- Fort Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson)

MEBRASKA

North Platte Substation, North Platte (Coreal Agronomy, J. E. Jodon)

SOUTH DAKOTA

U. S. Cereal Field Experiments, Redfiela (Theat Improvement, E. S. McFadden)

Agricultural Experiment Station, Brookings (A. N. Hume) (Dec. 27)

Yields of flax varieties in 1929 at three stations in South Dakota have been reported by Dr. A. N. Hume, Agronomist and Superintendent of Substations. The yields are the average of triplicate plots at Eureka and Highmore and of duplicate plots at Brockings. The average yield of each variety at the three stations is shown in the last column.

Variety	<u>C.I</u> .	Yield (bu. per acre)			
	No.	Eureka	Highmore	Brookings	Average
Linota	5/1/1	4.6	S.7	9.6	7.6
Buda	326	3.8	6.6	12.2	7.5
Bison	339	3.6	7.9	10.6	7.4
Redwing	320	4.3	8.0	8.5	6.9
Rio ·	280	2.8	7.2	9.8	- 6.6
N.D.R.	114	4.8	6.8	7.7	6.4
Argentine (commercial	.)	3.9	7.2	6.0	5.7
Damont	3	4.0	1.5	5.2	3.6
Hybrid 19x112	385			10.2	

Belle Fourche Field Station, Newell (Beyer Aune) (Dec. 14)

Yields of flax varieties grown in duplicate plots which were given a single irrigation, at Newell, S. Dak., in 1929, were as follows:

<u>Variety</u>	<u>C. I. No</u> .	<u>Yield</u> (Bu. per acre)
Bison Rio (L. 79) Redwing Linota Frimost Winona	359 250 320 244 12 1 7 9	15.3 14.4 12.5 11.0 10.1 9.1

Mr. Aune reports that the yellus probably are lower than they should have been due to the fact that irrigation was delayed too long.

NORTH DAKOTA

Northern Great Plains Field Station, Mandan (Gereal Agrenomy, V. C. Hubbard)

Morthern Great Flains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.)

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (Dec. 16)

Wintry weather has prevailed for the first half of the present month. Snow has fallen frequently and some drifting has occurred which promises to make many of the country roads impassable if the present weather continues. The snow was about 6 inches deep yesterday. I light blizzard which set in last night is still in progress, and snowdrifts are rapially becoming deeper.

The total precipitation for the year is now above normal, due largely to the unusual snowfall of last January and February and in November and December of the present winter.

Very little grain has been marketed in Dickinson in the past month, due partly to the light crop and partly to the condition of the roads.

The minimum temperature for the month to date was 10 degrees below zero. A minimum of 13 degrees below zero was reached one day in November.

(Jan. 3)

The temperatures have been quite moderate during the past week since the cold wave occurring before Christmas has disappeared. The mean temperature for December was 27.7 degrees, which is 0.9 degree below normal. The minimum for the winter was 37 degrees below zero on Dec. 18 and 19.

The total snowfall for December was 15.8 inches which is the heaviest snowfall recorded for December at this substation for the 35 years in which records have been taken at Dickinson. The total precipitation for 1929 was 17.21 inches, which is about 1.70 inches above normal. The snow was about a foot deep before the holiday thaw caused it to settle down to about 8 inches. The roads are now getting passable so that some wheat is being marketed again at local elevators.

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Langdon Substation, Langdon (Wheat Improvement, G. S. Smith)

MONTANA

Judith Basin Branch Station, Moccasin (Cereal Agronomy, B. B. Bayles)

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, L. L. Davis)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON.

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

Agricultural Experiment Station, Pullman (Stinking Smuts of Wheat, H. H. Flor)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)
Dec. 10)

The long drought in Oregon has been broken at last. Western and most of eastern Oregon have been favored with soaking rains during the past few days. At Moro 0.91 of an inch of rain fell on Dec. 2, 9, and 10. This is more than we have had for any 30-day period since last January. The total precipitation for the ll-months period, January to November, inclusive, was only 4.99 inches. For the three months of September, October, and November, the total rainfall was only 0.73 of an inch.

The rain came at a most opportune time. Most of the winter wheat in eastern Oregon was seeded in dry ground in late October and early November. About 50 per cent of the grain had sprouted as a result of about 0.33 of an inch of rain the last week in October. The unsprouted grain was rotting, and the sprouted grain was suffering from drought before the recent rains. If favorable temperatures prevail for the next week or ten days, I think most of the winter wheat seeded on the Station at least will emerge.

The lowest temperature at Moro in November was 10 degrees on the 21st. The weather so far in December has been mild.

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CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)

University Farm, Davis (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)





CEREAL COURIER

Official messunger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (MOT FOR PUBLICATION)

Vol. 22

January 31, 1930 Fersonnel (Jan. 16-31) and General Issue No. 2

PFRSCHMEL ITEMS

Lr. V. C. Muobard, junior agronomist in charge of the cereal agronomy investigations that are being conducted at the Northern Great Plains Field Station, Landan, M. Dake, has been authorized to come to Washington, early in February, to confer ith project leaders, assist in preparing material for genetic study, and prepare reports and manuscripts. Ur. Hubbard will be in Washington about two months.

Dr. Lefle T. Jenkins, associate agronomist in the cooperative corn investigations at Louis, Towa, arrived at Ithaca, N. Y., on January 5 to engage in anatomical and microchemical studies of the corn plant in the laboratories of Dr. A. J. Eames and Dr. E. F. Randolph. Dr. Jenkins /ill be in Ithaca about two menths.

Ar. E. Jodon, junior agronomist in charge of the occoperative cereal emperiments conducted at the Morth Platte Substation, North Platte, Nebr., the has been authorized to come to Tashington for the remainder of the winter to confer with project leaders, assist in preparing material for genetic studies, and prepare reports and manuscripts.

Mr. L. S. Mayer, addistant agronomist in the cooperative corn investigations conducted at Knowville, Tenn., has been authorized to attend the meetings of the agronomy section of the Association of Southern Agricultural Morkers at Jackson, Miss., from abruary 5 to 7, inclusive.

- Mr. E. S. McFadden, associate agronomist in charge of the wheat improvement investigations at Redfield, S. Dak., has been authorized to come to Washington early in February to confer with project leaders and to plan future experiments, and prepare reports. Mr. McFadden will be in Washington about six weeks.
- Mr. F. D. Richey, senior agronomist in charge of corn investigations was authorized to attend the Farm Week meetings to be held at Ames, Iowa, on January 27 to 29, inclusive, and make three addresses. The Iowa Agricultural Experiment Station paid the expenses of Mr. Richey's travel. From Ames, Mr. Richey was to proceed at Government expense to Urbana and Bloomington, Ill., to confer with Federal and State Officials regarding cooperative corn investigations, thence to Jackson, Miss., to attend the meetings of the agronomy section of the Association of Southern Agricultural Workers on February 5 to 7, inclusive, and present a paper on "Problems and Progress of Southern Corn Breeding."
- Mr. Hugo Stoneberg, assistant agronomist in the cooperative corn investigations at Baton Rouge, La., who has been in Washington since December 17, 1929, has been authorized to attend the meetings of the agronomy section of the Association of Southern Agricultural Workers at Jackson, Miss., February 5 to 7, inclusive. Mr. Stoneberg will proceed from Jackson to his permanent headquarters at Baton Rouge at the conclusion of the meetings.

MANUSCRIPTS AND PUBLICATIONS

2 .. manuscript entitled "Corn Diseases in Illinois," by <u>Benjamin</u>
<u>Koehler and James R. Holbert</u>, was approved on January 22 for publication
as a cooperative bulletin of the Illinois Agricultural Experiment Station.

Galley proof of article entitled "The Inheritance of Resistance to Bunt, <u>Tilletia tritici</u>, in Thite Odessa Wheat," by <u>Fred N. Briggs</u>, for publication in the Journal of Agricultural Research, was read on January 18.

Galley proof of the five articles prepared by members of this Office for the Yearbook of Agriculture for 1929 was read on January 22.

Galley proof of article entitled "Cultural Characteristics of Physiologic Forms of Sphacelotheca sorghi," by C. H. Ficke and C. O. Johnston, was read on January 22.

Galley proof of article entitled "Bacterial Streak Disease of Sorghua," by Charlotte Elliott, for publication in the Journal of Agricultural Research, was read on January 31.

The article entitled "The Weedishness of Wild Oats," by Harry V. Harlan, appears in the Journal of Heredity 20(11): 515-518, figs. 8-10. November, 1929.

Farmers' Bulletin 1611 entitled "Oats in the Western Half of the United States," by T. R. Stanton and F. A. Coffman, his been received, bearing date of December, 1929.

The article entitled "Hygroscopic Moisture of Flam Seed also Theat and Its Relation to Combine Harvesting," by A. C. Dillman, appears in the Journal of the American Society of Agronomy 22(1): 51-74, figs. 1-11. January, 1930.

NOTICE TO FIELD EMPLOYEES

The fungus section of the American Type Culture Collection is now being operated by the Office of Mycology and Disease Survey. Under the terms of the cooperative agreement between the Bureau of Plant Industry and the American Type Culture Collection provision is made for supplying transfers of any of the cultures in the collection to Bureau workers for their official work. The Office of Mycology and Disease Survey wishes to offer this service to the pathologists and other workers of the Bureau interested and to request the transfers of available species not now represented be donated to the collection. Unfortunately, it has not been possible as yet to obtain many common species and the cooperation of those in the Bureau who handle fungus cultures is earnestly desired. Inquiries relative to the collection may be made of John A. Stevenson, Mycological Collections.

THU E REPORT OF PUBLICATIONS AND MANUSCRIFTS

OFFICE OF CEREAL CROPS AND DISEASES

Calendar Year, 1929

In the calendar year 1929, 101 articles, papers, and abstracts were published in the various series of Department publications, in publications of cooperating State agricultural organizations, and in private journals. A total of 96 such manuscripts were submitted in 1929. There remained in press as of December 31, 1929, 62 manuscripts with the dates indicated: 1929, 53; 1928, 1; 1927, 3; 1926, 2; 1925,3.

GENERAL OR MISCELLANEOUS

Benton, Alva H., R. H. Black, W. R. Humphries, W. M. Hurst, C. E. Mangels, L. A. Reynoldson, H. E. Seielstad, and T. E. Ston. The Combined Harvester-Thresher in North Dahot. M. Dak. Agr. Expt. Sta. Bul. 225: [2]-49, figs. 1-17. May, 1929. (Cooperation with the Office of Cereal Crops and Diseases.)

Florell, V. H. Grain Free from Linture Worth All the Effort of Growing It. Los Angeles Sunday Times, Farm and Orchard Magazine, June 23, 1929.

Bulked-Population Method of Handling Cereal Hybrids.

Jour. Amer. Soc. Agron. 21(7): 718-724. July, 1929. (Occeperation between the Office of Cereal Crops and Diseases and the California Agricultural Experiment Station.)

Effect of Date of Seeding on Yield, Lodging, Anturity, and Nitrogen Content in Cereal Varietal Experiments. Jour. Amer. Soc. Agron. 21(7): 725-731, fig. 1. July, 1929. (Cooperation between the Office of Cereal Crops and Diseases and the California Agricultural Experiment Station.)

Harlan, Harry V. The Weedishness of Wild Cats. Jour. Heredity 20(11): 515-513, figs. S-10. November, 1929.

Lartin, John H. The Influence of the Combine on Agronomic Practices and Research. Jour. Amer. Soc. Agron. 21(7): 766-773. July, 1929. (These investigations were conducted by the Bureaus of Agricultural Economics, Flont Industry, and Public Roads, or the U. S. Department of Agriculture, in cooperation with the agricultural experiment stations of Texas, Oklahoma, Lonson, Tebrasha, Montana, Morth Dakota, South Dakota, Minnesota, Irlinois, Indiana, Pennsylvania, Virginia, and Georgia.)

- Richey, F. D. Interpreting Correlation Coefficients. Jour. Amer. Soc. Agron. 21(2): 232-234. February, 1923.
- Wiebe, G. A. A Cereal Nursery Sceder. (Note.) Jour. Amer. Soc. Agron. 21(8): 863-864, figs. 1-2. August, 1929

AGRONOMIC SUBJECTS

Barley

Harlan, Harry V. and Mary L. Martini. A Composite Hybrid Mixture. Jour. Amer. Soc. Agron. 21(4): 487-490. April, 1929.

L. H. Newman, and Mary L. Martini. Yields of Barley in the United States and Canada 1922-1926. U. S. Dept. Agr. Tech. Bul. 96: 1-84. Nevember, 1929. (Cooperation between the Office of Cereal Crops and Diseases and the Dominion of Canada Experimental Farms.)

and F. W. Shaw. Barley Variety Tests at a High-Altitode ranch near Obsidian, Idaha. Jour. Amer. Soc. Agron. 21(4): 439-443. April, 1929.

Corn

Drunson, Arthur M. and J. G. William. Correlations between Seed Ear and Kernel Characters and Yield of Corn. Jour. Amer. Sec. Agron. 21(9): 912-922. September, 1929. (Joint contribution from the Office of Coronl Crops and Diseases and the Kansas Agricultural Experiment Station)

Hughes, H. D., Jee L. Robinson, and A. A. Bryan. High Yielding Strains and Varieties of Corm for Lowa. Iowa Agr. Expt. Sta. Bul. 265: [2]-80, figs. 1-30. July, 1929. (Cooperation between the Office of Coreal Crops and Diseases and the Iowa Agricultural Experiment Station)

Jenkins, Merle T. Jorrelation Studies with Inbred and Crossbred Strains of Maize. Jour. Agr. Research 39(9): 677-721. Nov. 1, 1929. (Cooperation between the Office of Coreal Crops and Diseases and the Iowa Agricultural Experiment Station.)

- Jorgenson, L. R. Effect of Smut Infection on the Yield of Selfed Lines and F₁ Crosses in Laize. Jour. Amer. Soc. Agron. 21(11): 1109-1112. November, 1529. (Cooperation between the Office of Cereal Crops and Diseases and the Chio Agricultural Experiment Station and the Chio State University.)
- hyle, C. H. Relation of Hush Covering to Smut of Corn Dars. U. S.
 Dert. Agr. Tech. Bul. 120: [1]-7, pls. 1-2, May, 1929.
- Robinson, Joe L. and A. A. Bryan. Iowa Corn Tisld Test. Result for 1925. Iowa Corn and Small Grain Growers' Assoc. [1,20], j. [3]-30, figs. 1-5. [1,29] (Cooperation between the Office of Cereil Crops and Diseases and the Iowa Jorn and Small Grain Growers' Association and the Iowa Laricultural Experiment Station.
- Sprague, George F. Hetero-Fertilization in Marze. Science 69 (1794): 526-527. Lay 17, 1929. (Cooperation between the Office of Cereal Crops and Diseases and the Mebraska Agricultural Experiment Station.)
- Woodworth, C. M. A Program of Corn Amprovement. Ill. Agr. Empt. Station. 284: 3-27, figs. 1-12. October, 1928. [Revision; first edition printed in July, 1924] (Cooperation with the Office of Cereal Crops and Diseases.)

glow

- Arny, A. C., T. E. Stoa, Clyde McKee, and L. C. Dillman. Flax Cropping in Mixture with Wheat, Oats, and Barley. U. S. Dept. Agr. Tech. Bul. 133: 1-47, figs. 1-10. September, 1929. (Cooperation between the Office of Cereal Crops and Diseases and the Agricultural Emperiment Stations of Minnesota, Morth Dakota, Montana, South Dakota, Wisconsin, and Chio.)
- Brinsmade, J. C., Jr. Argentine Flax Not Recommended. Dakota Farmer 49(3): 460-461. April 15, 1929.
- Dillman, L. C. Flam Resistant to Wilt Developed at Experiment Stations. U. S. Dept. Agr. Yearbook 1928: 296-297. 1925. (Separate Mc.-1062)
- Dehiscence of the Flax Boll. Jour. Amer. Scc. Agron. 21(5): 832-333, fig. 1. Lagust, 1929.
- and R. H. Black. Moreture Content o Flanseed Law Its Relation to Harvesting, Storage, and Grashing. Jour. Amer. Soc. Agron. 21(3): \$18-131, fig. 1. August, 1929. (Dicteration between the Office of Cereal Crops and Diseases and the Grain Livision of the U.S. Bureau of Agricultural Economics.)

Grain Sorghum and Broomcorn

- Martin, John H., L. A. Reynoldson, B. E. Rothgeb, and W. M. Hurst. Methods of Harvesting Grain Sorghums. U. S. Dept. Agr. Tech. Bul. 121: 1-35, figs. 1-18. August, 1929. (In cooperation with the Kansas and Oklahoma agricultural experiment stations.)
- and John B. Sieglinger, assisted by A. F. Swanson,
 D. R. Burnham, H. J. Clemmer, E. H. Coles, F. E. Keating, and W. M. Osborn.

 Spacing and Date-of-Seeding Experiments with Grain Sorghums. U. S. Dept.

 Agr. Tech. Bul. 131: 1-47, figs. 1-9. November, 1929. (In cooperation with the Kansas Agricultural Experiment Station.)
- Parker, John H. Sorgo Known as Atlas Yields Well and Resists Lodging. U. S. Dept. Agr. Yearbook 1928: 551-553, fig. 212. 1929. (Separate No. 1085.)
- Sieglinger, J. B. Broomcorn Harvesting at the Milk Stage Produces Best Brush. U. S. Dept. Agr. Yearbook 1923: 169-171, fig. 32. 1929. (Separate No. 1060.)
- That Sorghum Variety is Best? Okla. Farmer-Stockman 42(5): 16. March 1, 1929.

Oats

- Bayles, B. B. and F. A. Coffman. Effects of Dehulling Seed and of Date of Seeding on Germination and Smut Infection in Oats. Jour. Amer. Soc. Agron. 21(1): 41-51, fig. 1. January, 1929. (Cooperation between the Office of Cereal Crops and Diseases and the Oregon Agricultural Experiment Station.)
- Childs, R. R. Fall Sown Oats for Georgia. Ga. State Col. Agr. Ext. Div. Bul. 355: [3]-22, illus. November, 1928. (Cooperation between the Office of Cereal Crops and Diseases and the Extension Division of the Georgia State College of Agriculture.)
- Florell, V. H. The Synthetic Formation of <u>Avena sterilis</u>. Jour. Heredity 20(5): 227. May, 1929.
- Mackie, W. W. Oat Varieties in California. Calif. Agr. Expt. Sta. Bul. 467: 3-46, figs. 1-4. April, 1929. (Cooperation between the Office of Cereal Crops and Diseases and the California Agricultural Experiment Station.)

- Stanton, T. R. Barley in Oats. McClain Company, Linnappolis, Minn. Circular for use of Math. Crop Improvement Com., 105 La Salle St., Chicago, Ill. [January, 1929.]
- and F. A. Coffman. Yellow-Kerneled Fatuoid Cats. Jour. Heredity 20(2): [66]-70, figs. 3-4. February, 1929.
- u. S. Dept. Agr. Farmers' Bul. 1581: 1-28, figs. 1-20. June, 1929.
- and F. A. Coffman. Spring-Sown Red Oats. U. S. Dept. agr. Farmers' Bul. 1553: 1-18, figs. 1-12. June, 1929.
- united States. U. S. Dept. Agr. Farmers' Bul. 1611: 1-22, figs. 1-11. December, 1929.
- , E. F. Gaines, and H. H. Love. Registration of Varieties and Strains of Cats, IV. Jour. Leer. Soc. Agron. 21(12): 1175-1180. December, 1925. (Published under a cooperative agreement between the American Society of Agronomy and the Bureau of Plant Industry.)
- , F. A. Coffman, and V. F. Tapke. Out Varieties That Resist Smut Grown by Experimentation. U. S. Dept. Agr. Yearbook 1923: 481-482. 1929. (Separate To. 1077.)

Rice

Jones, Jenkin W. Review of the Literature on Pollination, Hour of Blooming, and Natural Crossing in Rice. 13 p. 1929. [Builtigraphed.] (Cooperation between the Office of Cereal Crops and Diseases and the California Agricultural Experiment Station.)

Technic of Rice Hybridization in California. Jour. Amer. Soc. Agron. 21(1): 35-40. January, 1929. (Cooperation between the Office of Cereal Crops and Diseases and the California Agricultural Experiment Station.)

Distribution of Anthocyan Figments in Rice Varieties. Jour. Amer. Scc. Agron. 21(9): 867-875. September, 1929. (Cooperation between the Office of Cercal Crops and Diseases and the Valifornia Agricultural Experiment Station.

Rye

Martin, John H. and Ralph W. Smith. Growing Rye in the Western Half of the United States. U. S. Dept. Agr. Farmers' Bul. 1358: 1-17, figs. 1-10. Issued September, 1923; revised Wovember, 1923.

Wheat

- Ball, C. R. Wheat Production in America. Encyc. Brit. 23: 563-564.
- Clark, J. Allen and Karl S. Quisenberry. Varieties of Hard Red Winter Wheat. U. S. Dept. Agr. Farmers' Bul. 1585: 1-13, figs. 1-4. June, 1929.
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CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NCT FOR PUBLICATION)

Vol. 22 February 15, 1930 No. 3 Fersonnel (Feb. 1-15) and Field Station (Jan. 16-31) Issue

PERSONNEL ITEMS

Dr. James R. Holbert, senior agronomist in charge of the cereal-disease investigations conducted in cooperation with the Funk Bros. Seed Co., of Bloomington, Ill., and the Illinois Agricultural Experiment Station, has been authorized to attend the annual meeting of the Illinois Farmers' Institute to be held at Galesburg, Ill., on February 18. Dr. Holbert will talk on the practical aspects of his studies on cold resistance in corn.

Miss Helen Johann, associate pathologist associated with Dr. James G. Dickson in the cooperative cereal-disease investigations at Madison, with Mrs. Grace Wineland Pugh, a former co-worker with Dr. Dickson and Miss Johann in the cooperative research. Miss Johann will be away from Madison for a week.

Mrs. Hilda B. Lyons was assigned on February 1 as clerk-stenographer to the senior agronomist in charge of corn investigations to fill the position made vacant by the recent transfer of Miss Helen L. Getty.

Mr. N. A. McCall, principal agronomist acting in charge, attended the meetings of the agronomy section of the Association of Southern agricultural Workers held at Jackson, Miss., February 5 to 7.

Mr. McCall will attend on February 27, at St. Paul, Minn., a workers' conference for the discussion of the results of last year's experiments and plans for the continuation of experiments in 1930 in the cooperative hard spring wheat program in the North-Central States. At the conclusion of the conference Mr. McCall will go to Madison, Wis., with Messrs. J. Allen Clark and K. S. Quisenberry to confer with Mr. B. B. Bayles and to inspect the work he has done this winter in the laboratories and greenhouse of Dr. James G. Dickson at the University of Wisconsin. Mr. McCall will be back in Washington about March 3.

Mr. E. S. McFadden, of Redfield, S. Dak., who has been in the Washington office since February 5, will leave for his headquarters on February 23, stopping en route at St. Paul, Minn., on February 27. Mr. McFadden is in charge of the wheat improvement investigations at Redfield, cooperative with the South Dakota Agricultural Experiment Station and the Office of Forage Crops and Diseases, Bureau of Plant Industry.

VISITORS

Mr. August L. Welson, superintendent of the Cheyenne Experiment Farm, Cheyenne, Wyo., was an Office visitor on February 4.

SPRING WHEAT IMPROVEMENT WORKERS' CONFERENCE

At University Farm, St. Paul, Minn., there will be held a conference on February 27 for the discussion of last year's experiments in the cooperative hard spring wheat program in the North Central States. Plans for the continuation of experiments in 1930 also will be considered. The following members of this Office have been authorized to attend the conference:

- M A. McCall, Principal Agronomist, Acting in Charge.
- J. Allen Clark, Senior Agonomist in Charge of Western Wheat Investigations.
- K. S. Quisenberry, Associate Agronomist in Western Wheat Investigations.
- B. B. Bayles, Assistant Agronomist in charge of the cooperative cereal-agronomy experiments at the Judith Basin Substation, Moccasin, Mont.
- E. S. McFadden, Associate Agronomist in charge of Wheat improvement investigations at the United States Cereal Field Experiments, Redfield, S. Dak.
- R. W. Smith, Associate Agronomist in charge of the cooperative cereal-agronomy experiments at the Dickinson Substation, Dickinson, N. Dak.

MANUSCRIPTS AND FUBLICATIONS

- 3 A manuscript entitled "Influence of Dehulling the Caryopsis on Covered Smut Infection and Related Phenomena in Oats," by T. R. Stanton, F. A. Coffman, V. F. Tapke, G. A. Wiebe, R. W. Smith, and B. B. Bayles, was submitted to the Journal of Agricultural Research on February 13.
- 4 A manuscript entitled "Growth Habit and Yield in Wheat as Influenced by Time of Seeding," by B. B. Bayles and J. F. Martin, were submitted to the Journal of Agricultural Research on February 15.

Galley proof of article entitled "Effect of Leaf Rust (<u>Puccinia</u> triticina Eriks.) on Yield of Wheat, " by <u>E. B. Mains</u>, for publication in the Journal of Agricultural Research, was read on February 6.

Galley proof of article entitled "The Effect of a Seed Disinfectant on Grain and Straw Yields and Smut Control in Winter Barley," by J. W. Taylor and Marion Griffiths Zehner, was read on February 6.

Page groof of article entitled "Bacterial Streak Disease of Sorghums," by Charlotte Elliott, for publication in the Journal of Agricultural Research, was read on February 15.

FIELD STATION CONDITION AND PROGRESS

(All experiments except those conducted at the Arlington Experiment Farm, Rosslyn, Va., are in cooperation with State agricultural experiment stations or other agencies.)

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor),

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, W. T. Craig)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins) (Feb. 3)

Very little field work was done at the station in January because of frequent rains. The total precipitation for the month was 9.66 inches, occurring on 12 days. This is the heaviest rainfall ever recorded at this station for January. The previous high record of 7.47 inches was made in January, 1926.

Temperatures of freezing or below were recorded on eight days. Last year and the year before freezing temperatures were recorded on seven days. The lowest temperature was 19 degrees F. on the 13th; last year the lowest for the same month was 24 degrees F., and in 1928 the lowest for January was 19 degrees F.

This severe weather is causing much suffering and death to livestock. Straw stacks are fast disappearing and in many instances can scarcely be seen because of the large number of cattle crowded around them striving to keep alive by filling themselves with this rather poor feed. If the present weather continues the livestock losses will be extremely heavy, as it is known that rice straw alone will not sustain life very long, and even this filler will soon be all consumed.

The suffering is not confined only to livestock. Many of the poor people are having more than their share of discomfort and actual want. This is especially true among the agricultural laborers. These weather conditions have destroyed vegetables that usually thrive throughout the winter months. In many instances even sweet potatoes were destroyed by excessive rains and cold, about the time they were ready for harvest. These losses have resulted in advancing the price of the ordinary articles of food beyond the means of the field laborer, and consequently are causing in some cases extreme hardships.

Field work on the station comprised the plowing of stuble land; the repairing of fences and bridges; and the cleaning of ditches.

Out-of-State visitors were Mr. Robert Carr, of the Delta Branch Station at Stoneville, Liss., and two rice farmers from Arkansas.

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

MISSOURI

Agricultural Experiment Station, Columbia (Coreal Agronomy, L. J. Stadler)

OHIO

Agricultural Experiment Station, Wooster (Corn Investigations, G. H. Stringfield)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, H. C. Murphy)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, LaFayette (Corn Rots and Metallic Poisoning, J. F. Trest, Acting in Charge)

Purdue University Agricultural Experiment Station, LaFayette (Leaf Rusts, E. B. Mains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, E. R. Ausemus)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT FLAINS AREA (South to North)

OKLAHOMA

Toodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) [Jan. 16]

This part of the country has experienced some real winter weather; it is moderating now, but the ground is covered with snow.

The grain sorghums have been cleaned and weighed, and the average results are presented in the following table:

Yields of Grain Sorghum Date-Varietal Experiments, Woodward, Okla., 1929.

	:	C. I.	:Yield,	Bu. pe	r Acre)*	\angle :Av. of 3
Variety	:	No.	:Date of	Seedi	ng	_:Seedings.
	:		:May 24:	June 7	:June 21	<u>:</u>
Beaver milo		371	30.0	23.7	15.9	25.9
Dwarf milo		332	32.7	30.9	27.1	30.2
Fargo milo		809	26.7	30.7	12.7	23.4
Feterita		182	32.7	27.5	29.7	30.0
Spur feterita		623	33.0	25.7	27.7	28.8
Dwarf feterita		182-1-Dwf.	29.9	25.7	28.5	23.0
Dwarf hegari		750	21.1	7.6	9.6	12.3
Premo		373	30.5	27.7	36.0	31.4
Chiltex		874	31.3	29.9	37.2	32.8
Wonder kafir		372	31.7	27.5	33.8	31.0
Kaferita, feterita seeded		812	31.9	25.3	34.6	30.6
Kaferita, kafir seeded		811	26.7	29.3	36.8	30.9
Early Red kafir		366	33.4	25.6	38.6	33.5
Fink kafir		432	23.9	24.9	35.4	29.7
Dawn kafir		340	33.1	25.7	37.2	32.0
Sunrise kafir		472	27.9	23.7	32.9	28.2
Reed kafir		628	34.0	21.7	33.2	31.2
Sharon kafir		S 1 3	30.1	28.5	3 S.8	32.5
Standard Blackhull kafir		71	31.3	29.5	39.0	33.3
Bishop kafir		81 4	30.7	30.3	42.0	34.4
Darso		615	34.1	26.7	39.6	33.4

*/ Each yield is the average of two 1/45-acre plots, 56 pounds to the bushel.

Minimum temperature for December, 1929, 3 degrees on the 15th; maximum, 73 degrees on the 30th; precipitation, 0.12 of an inch. For the first half of January, 1930, minimum temperature, -13 degrees on the 9th and 10th, maximum, 64 degrees on the 5th; precipitation, 0.41 of an inch of moisture from two snows.

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Farker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston) (Feb. 7)

The month of January was marked by a series of periods of very low temperatures over most of the winter-wheat area of the southern Great Plains. At Manhattan snow began falling on January 7 and the ground was continuously covered with snow until February 1. Several periods of precipitation brought the depth of snow to about 8 inches. During this period about 10 days of very low temperatures occurred. A minimum of 21 degrees below zero was recorded on January 22.

The leaf-rust nursery was visited today for the first time since January 1. Winter wheat was found to be in excellent condition, even spaced sown hybrids having a thrifty appearance. The excellent snow cover afforded good protection against freezing of the green parts and prevented freezing of the soil.

The snow cover also was favorable for the overwintering of leaf rust spores. Most leaves bearing uredinia had been killed prior to January 1, however, and a careful search today resulted in the finding of only one live uredinium on a live leaf. Many leaves show considerable flecking, however, and it is very likely that leaf rust is overwintering in the mycelial stage in the host tissues.

Leaf-rust studies in the greenhouse are progressing in a very satisfactory manner. The testing of the F_3 families of 13 crosses for resistance to physiologic form 9 is well under way. It is estimated that at least 10,000 seedling plants will be used in these studies. About 600 F_2 plants representing 15 crosses are being grown to maturity. Studies on the effect of leaf-rust infection on the water requirement and winter resistance of wheat also are in progress in the greenhouse.

Fort Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson)

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, N. E. Jodon)

SOUTH DAKOTA

U. S. Cereal Field Experiments, Redfield (Wheat Improvement, E. S. L. CFadden)

NORTH DAKCTA

Northern Great Plains Field Station, Mandan (Cereal Agronomy, V. C. Hubbara)

Horthern Great Flains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (Feb. 3)

The month of January was unusually cold, though not so cold as January of 1929. The minimum temperature was -31 degrees F. on January S and 9. The maximum temperature was +32 degrees F. on the 3rd. The two weeks from January 6 to January 20, inclusive, were enceptionally cold. The average minimum temperature for the 15 days was -21 degrees and the average maximum, -4 degrees. Since January 22, temperatures have been commaratively mild.

Total precipitation for the month was 0.19 of an inch, which fell chiefly in light snow flurries throughout the month. The ground is covered with snow to an average depth of about nine inches.

Mr. V. C. Hubbard left Mandan Friday, January 31, for Washington, D. C.

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith)

Mild weather prevailed during the first few days of January, but the period from the 7th to the 16th, inclusive, was one of the coldest experienced here for some time. During the latter period the mean temperature was 13.9 degrees below zero, the lowest point being 30 was below on the morning of the 8th. During the 10-day period the temperature was below zero all the time except on the 10th and 14th, when it reached a maximum of 1 degree above zero for a short time. In averaging the corn yields for the annual report the following yields of shelled corn per acre were obtained for the ll-year period, 1919 to 1929, inclusive:

	Bu-
Gehu flint	25.9
Dakota White flint	24.7
Northwestern (semident)	23.5
Fayne Thite dent	21.4
Minnesota No. 13 (dent)	19.0

The highest yielding varieties of corn have yielded slightly more in digestible nutrients per acre than have the highest yielding varieties of wheat, oats, barley, or rye. This higher yield was obtained with considerably more labor than required for the small grains, however.

(Feb. 1)

The month of January was slightly warmer than January, 1929, although much colder than usual. There were only seven days when the minimum temperature was above zero. These were at the beginning and at the end of the month. The minimum temperature was 30 degrees below zero on the 5th and the minimum was colder than 20 degrees below on 10 other days. The mean temperature for the month was nearly 2 degrees below, while the normal mean for January at this station is about 10 above zero. The maximum for the month was 45 degrees on January 1.

The precipitation for January was 0.64 of an inch which is slightly above normal. The snow is perhaps a foot deep on a level. February set in with a light rain, the first for the year 1930. When it freezes the surface of the snow will be icy and cannot drift, as it has done with each windy day, until more snow falls again.

In comparing the yields obtained in 1929 from varieties of wheat, oats, and barley grown in both replicated plots and replicated nursery rows, correlation coefficients were worked out to determine the correlation between yields obtained in the two tests. Only those varieties were used that were replicated in both experiments. The numbers in each case were too small for conclusive results. There is a high correlation between the yields in plots and nursery for 17 oat varieties but very low correlations in the hard-spring-wheat varieties and in the barley varieties. The plots were sown on corn land and the yields were reduced by drought more than were those from the nursery sown on fallow. Below are the correlations obtained:

Crop	No. varieties	Average yield (Bu. per acre) Plots Nursery	Correlation between yields of plots and nursery
Hard spring wheat	15	9.8 14.8	r= +0.142±3.17
Oats	17	19.0 29.1	r= +0.720=0.07
Barley	15	16.5 16.7	r= +0.198=0.17

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. J. Boyle)

Langdon Substation, Langdon (Wheat Improvement, G. S. Smith)

MONTANA

Judith Basin Branch Station, Moccasin (Cereal Agronomy, B. B. Bayles)

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, L. L. Davis)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

Agricultural Experiment Station, Pullman (Stinking Smuts of Wheat, H. H. Flor)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)

University Farm, Davis (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Berkeley (Coreal Smuts, F. N. Briggs)



CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR FUBLICATION)

Vol. 22

February 23, 1930
Personnel (Feb. 16-28) and General Issue

No. 4

PERSONNEL ITELS

Mr. Nelson E. Jodon, junior agronomist in charge of the cooperative cereal experiments at the North Flatte Substation, North Flatte, Nebr., who has been in the Washington office since February 6, left on February 26 to return to his headquarters at North Flatte.

Dr. A. G. Johnson, principal pathologist in charge of cereal-disease investigations, was in Baltimore, Md., on February 28 to confer with officials of the Bureau of Agricultural Economics on matters relating to baraley export.

VISITORS

Dr. John R. Fain, professor of agronomy at the Georgia State College of Agriculture, Athens, Ga., was an Office visitor on February 25.

Dr. F. E. Kempton, of Centerville, Ind., was an Office visitor on February 28.

MANUSCRIPTS AND PUBLICATIONS

5 A manuscript entitled "Notes on Phyllosticta rabiei on Chick Pea," by Roderick Sprague, was approved on February 18 for submittal to Phytopathology. (The work discussed in this manuscript was done by Dr. Sprague before he entered the Office of Cereal Crops and Diseases.)

Galley proof of article entitled "A Mosaic of Wheat Transmissible to All Cereal Species in the Tribe Hordeae," by H. H. McKinney, for publication in the Journal of Agricultural Research, was read on February 24.

Galley proof of article entitled "Unusual Crossing in Oats at Aberdeen, Idaho," by F. A. Coffman and G. A. Wiebe, for publication in the Journal of the American Society of Agronomy, was read on February 26.

The article entitled "The Effect of a Seed Disinfectant on Grain and Straw Yields and Smut Control in Winter Barley," by J. W. Taylor and Marion Griffiths Zehner, appears in the Journal of the American Society of Agronomy 22(2): 113-123, fig. 1. February, 1930.

The note entitled "A Useful Holder for Plat Stake Labels," by A. F. Swanson, appears in the Journal of the American Society of Agronomy 22(2): 188-189. February, 1930.

U. S. Dept. Agr. Tech. Bul. 143 entitled "Field Studies on the Rust Resistance of Oat Varieties," by M. N. Levine, E. C. Stakman, and T. R. Stanton, has been received from the Government Frinting Office bearing date of February, 1930. (Cooperation between the Office of Cereal Crops and Diseases and the Minnesota Agricultural Experiment Station.)

The article entitled "Inheritance of the Second Factor for Resistance to Bunt, Tilletia tritici, in Hussar Wheat," by F. N. Briggs, appears in the Journal of Agricultural Research 40(3): 225-232, figs. 1-2. February 1, 1930. (Cooperative investigations of the Office of Cereal Crops and Diseases, Bureau of Flant Industry, U. S. Department of Agriculture, and the Division of Agronomy, California Agricultural Experiment Station.)

The article entitled "Cosn Breeding," by Arthur M. Brunson, appears in the Report of the Kansas State Board of Agriculture for the Quarter Ending September, 1929 (Corn in Kansas), p. 73-30, illus. 1929. (Cooperation between the Office of Cereal Crops and Diseases and the Kansas Agricultural Experiment Station.)

The article entitled "Mendelian Factors in the Cowpea (Vigna species)," by William J. Spillman and William J. Sando, appears in the Fapers of the Michigan Academy of Science, Arts, and Letters 11(1929): 249-253, illus. 1930. (The junior author is a member of the Office of Cereal Crops and Diseases.)





CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22 March 15, 1930 No. 5
Personnel (March 1-15) and Field Station (Feb. 16-28) Issue

NOTICE

Beginning with the issue of April 10, 1930, the Cereal Courier will appear three times a month, namely, on the 10th, 20th, and last days of the month. The courtesy will be greatly appreciated if all contributors at agronomic and pathologic headquarters will mail field reports promptly on the 15th and last days of the month. The Courier issues of the 10th and 20th days of the month carry the field reports.

PERSONNEL ITEMS

Dr. J. G. Dickson, agent in the cooperative cereal-disease investigations being conducted at Madison, Wis., came to Washington the latter part of February to make arrangements for a trip to various European countries in the interest of scab disease of cereals. Dr. Dickson left Washington on March 5 for New York whence he sailed on the following day on the S. S. "American Merchant," of the American Merchant Lines, with the expectation of arriving in London on March 15. He will make London his temporary headquarters until the end of March, while conferring with the various British plant pathologists and botanists.

From London Dr. Dickson will proceed to Germany and thence to Russia. He will return to London later, after visiting a number of other European countries, in time to attend the International Congress of Plant Science to be held in England in August. At the end of the Congress he expects to visit still other European countries and to return to the United States some time in October or November of this year.

- Mr. A. C. Dillman, associate agronomist in charge of flax investigations, was authorized to attend the meeting of the Flax Development Committee at St. Paul, Minn., on February 28 and to present a paper on "The Place of Flax on the Farm".
- Dr. H. V. Harlan, principal agronomist in charge of barley investigations, reports the death early in March of Mr. F. W. Shaw, ranch owner and experimenter near Obsidian, in the Sawtooth Mountains of Idaho, who was one of Dr. Harlan's valued cooperators. Mr. Shaw was joint author with Dr. Harlan of an article entitled "Barley Variety Tests at a High-Altitude Ranch near Obsidian, Idaho," which appeared in the Journal of the American Society of Agronomy 21(4): 439-443. April, 1929.
- Dr. J. R. Holbert, senior agronomist in charge of the cereal-disease investigations conducted in cooperation with Funk Bros. Seed Co., of Blockington, Ill., and the Illinois Agricultural Experiment Station, arrived in Washington on March 6 to complete a cooperative manuscript on corn-disease investigations and to confer with Department officials. On March 5 Dr. Holbert delivered a radio talk over the Department noon-day hook-up on "The Present Seed-Corn Situation." He left Washington on March 14, returning directly to his headquarters at Bloomington.
- Mr. V. C. Hubbard, of Mandan, N. Dak., who has been in Washington since February 2 left on March 13 to return to his headquarters, where he is in charge of the cereal-agronomy investigations at the Northern Great Plains Field Station.
- Mr. C. O. Johnston, assistant pathologist in charge of the cooperative leaf-rust investigations at Manhattan, Kans., was authorized to attend the meeting of the Sixth Annual Branch Agricultural Experiment Station Conference and read a paper on some of the common barley diseases and their control.
- Mr. J. W. Jones, superintendent of the Biggs Rice Field Station, Biggs, Calif., who has been in Washington since the latter part of December left on March 9 to return to his headquarters.

- Dr. J. D. Sayre, engaged in physiclogical research with corn in cooperation with the Ohio Agricultural Experiment Station, at Moster Ohio, was in Washington from March 11 to 14 to confer with members of the Office regarding the progress of the investigations and the preparation of manuscripts.
- Dr. R. G. Shands, who is assisting Dr. J. G. Dickson at Madison Wis., in connection with wheat and barley scab investigations, came to Washington on March 1 to confer with officials of the Office regarding barley-scab investigations. He returned on March 6 to his headquarters at Madison, where he is acting in charge of the cooperative cereal-disease work during the absence of Dr. Dickson.
- Mr. Glenn M. Smith, of LaFayette, Ind., arrived in Washington on March 3 from Geneva, N. Y., where he had aduressed the Extension School for Canners' Field Men on March 6. Unile in Washington Mr. Smith conferred with Bureau and Office officials regarding the cooperative sweetcorn diseases conducted at LaFayette, Ind. He left for his headquarters on March 13.



MANUSCRIPTS AND PUBLICATIONS

- 6 A manuscript entitled "Seed Treatments for Controlling the Covered Smut of Barley," by R. W. Leukel, was submitted on March 12 for publication in the Technical Bulletin series.
- 7 A manuscript entitled "Some Applications of Statistical Methods to Agronomic Experiments," by Frederick D. Richey, has been approved for submittal to the Journal of the American Statistical Association.

Galley proof of article entitled "Determining the Date of Silking in Experiments with Corn," by Marion T. Meyers, for publication in the Journal of the American Society of Agronomy, was read on March 7.

Galley proof of Journal of Agricultural Research paper G-717 entitled "A Cytological Study of Heterothallism in <u>Puccinia graminis</u>," by <u>Ruth F. Allen</u>, was read on March S.

The paper entitled "Inheritance of Resistance to Bunt, Tilletia tritici, in White Odessa Wheat," by Fred N. Briggs, appears in the Journal of Agricultural Research 40(4): 353-359, fig. 1. February 15, 1930. (Cooperation between the Office of Cereal Crops and Diseases, and the California Agricultural Experiment Station.)

SPRING WHEAT IMPROVEMENT WORKERS! CONFERENCE

A workers' conference of Department and State station personnel engaged in the cooperative spring wheat improvement program in the States of Minnesota, North Dakota, South Dakota, and Montana, was held at University Farm, St. Paul, Minn., on February 28.

Representatives from the four State stations and from the Office of Cereal Crops and Diseases were in attendance. The following Office personnel was present:

- 17. A. McCall, principal agronomist, acting in charge;
- J. Allen Clark, senior agronomist in charge of western wheat investigations;
- K. S. Quisenberry, associate agronomist in western wheat investigations;
- B. B. Bayles, assistant agronomist in charge of the cooperative cereal-agronomy experiments at the Judith Basin Substation, Moccasin, Mont.;
- E. S. McFadden, associate agronomist in charge of wheat improvement investigations at the U. S. Cereal Field Experiments, Redfield, S. Dak.;
- R. W. Smith, associate agronomist in charge of the cooperative cereal-agronomy experiments at the Dickinson Substation, Dickinson, N. Dak.:
- E. R. Ausemus, assistant agronomist in charge of the cooperative wheat-breeding investigations at University Farm, St. Paul, Minn.;
- R. H. Bamberg, agent in charge of cereal pathology garden, University Farm, St. Paul, Minn.

The morning session of the conference was devoted largely to a discussion of cooperative relationships and policies. At the afternoon session reports were given on the results of the experiments in 1929, and plans for future work were discussed and agreed upon.

FIELD STATION CONDITION AND PROGRESS

(All experiments except those conducted at the Arlington Experiment Farm, Rosslyn, Va., are in cooperation with State agricultural experiment stations or other agencies.)

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm. Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, W. T. Craig)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIAMA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)
(March 3)

Field work in the rice fields of southern Louisiana during February was confined mainly to the second and third weeks because of heavy rains in the early and latter parts of the month. The total precipitation was 5.24 inches, which is about the same as for February of 1929 and about an inch above the 20-year average.

A temperature of freezing or below occurred on only one day, the 17th, when a temperature of 31 degrees F. was recorded. The lowest temperature in February of last year was 28 degrees F., and freezing temperatures were recorded on four days.

Plowing operations on the station were completed the latter part or February. Other field work comprised the removal of levees where changes are to be made in plots; the cleaning of ditches; and the repairing of culverts and bridges.

Dr. C. T. Dowell, Dean of the College of Agriculture, Baton Rouge, was a visitor at the Station on February 25.

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

MISSOURI

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

OHIU

Agricultural Experiment Station, Wooster (Corn Investigations, G. H. Stringfield)

IO.A

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, H. C. Murphy)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, LaFayette (Corn Rots and Metallic Poisoning, J. F. Trost, Acting in Charge)

Purdue University Agricultural Experiment Station, LaFayette (Leaf Rusts, E. B. Mains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, E. R. Ausemus)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. 3. Sieglinger)

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston) (Feb. 25)

The weather during February in the central Great Plains has been unseasonably warm. Temperatures have ranged from 50 degrees F. upwards to a maximum of Sl degrees F., the latter being recorded here yesterday. I understand that temperatures as high as S3 degrees were recorded at some points in Kansas. There was only one brief cold spell in February, the remainder of the month being very warm and spring-like. Trees and shrubs are progressing much too rapidly for this season of the year.

Winter wheat is making an excellent growth but not so much as to be seriously damaged by a moderate cold wave. I visited the nursery yesterday and found wheat putting out many new leaves. Even spaced plants are coming forward in good condition. I have been able to find a few uredinia of leaf rust in the nursery. These invariably have been on old green leaves near the base of the plant. Yesterday I found several uredinia just breaking through the epidermis. There seems no doubt but that such infection is the result of mycelium overwintering in the leaf tissues.

Greenhouse studies are progressing rapidly now. Several thousand F3 plants have been inoculated with a known physiologic form of leaf rust and the rust readings made. If the present warm weather continues, it will be necessary to terminate greenhouse experiments in the near future. Temperatures are too high for satisfactory leaf rust experiments in the greenhouse when temperatures reach 70 degrees outside.

Fort Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson)

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, N. E. Jodon)

SOUTH DAKOTA

U. S. Cereal Field Emp riments, Redfield (Wheat Improvement, E. S. McFadden)

NORTH DAKOTA

Morthern Great Plains Field Station, Mandan (Cereal Agronomy, V. C. Hubbard)

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (March 1)

Weather conditions during February were characterized by comparatively high temperatures and abundant precipitation. The four days from February 12 to 15, inclusive, and February 27 and 28 were the only days on which sub-zero temperatures were recorded. The maximum temperature for the month was 55 degrees on the 18th and the minimum, -15 degrees on the 14th.

The snow which covered the ground during most of the winter melted rapidly in February and was nearly gone by February 22, except in sheltered locations. Considerable moisture must have gone into the ground but much of it ran off to swell the streams.

The ice on the Heart River started to break up on February 19, just four weeks earlier than in 1929. The ice gorged in the lower channel on the 20th. The water rose rapidly about 10 feet in a few hours and overflowed the banks. At 5 p.m. on the 20th there was water running noises highway No. 6 between the experiment station and town. Traffic was practically suspended on roads south of Mandan until the water subship i late in the afternoon of February 22. The vater rose again about from on the 23rd and temporarily suspended traffic for a few hours. Many homes were completely surrounded by water, and interiors were flooded in some cases so that the families had to move out. Traffic on the highway between Landan and Bismarck has been suspended almost continuously during the past week, and the road is still impassable on account of high water. The Heart River has subsided to about 5 feet below the high flood stage and has frozen over again.

The vater in the Hissouri River rose to the 10-feet stage at which the ice broke up in 1929, but the ice is still holding as a result of exceptionally cold weather the last week in February. A warning was issued from the weather bureau today to dwellers in the lowlands near the Hissouri that the river is rising and that the breakup of ice may be expected at any time. There is a possibility of a serious flood following a winter of unusually heavy snowfall. If the cold weather continues so that the excess water is carried out gradually over a long period, the river may be able to take care of the extra large volume of vater without serious overflow.

On February 24 we had the heaviest showfall for any one day since 1910 and the third heaviest in the past 55 years. The ground was covered to an average depth of about 10 inches. The total procipitation recorded that day has 1.03 inches. For February it was 1.65 inches, of which 1.74 inches here recorded since February 24. So much show is likely to cause further trouble from flood waters. It also should provide an abundant sapply of moisture to give early cross a good start.

<u>Dickinson Substation, Dickinson</u> (Cereal Agronomy, R. W. Smith) (Feb. 15)

The weather has been comparatively mild in the first half of February. The temperature was above zero all the time until the morning of the 13th. The minimum for the month thus far was about 10 degrees below zero on the 14th, and a maximum of 41 degrees was reached on the 5th and 5th. The snow has thawed and settled considerably, and the ground, which has been covered with snow since the latter part of November, shows a few bare spots on plowed fields and hillsides. The winter grain, being sown in stubble, still has an abundant covering of snow for protection.

The annual report of cereal work at this station for 1929 is now completed except for a few data to be inserted in tables.

Supt. Leroy Moomaw returned yesterday from Minot, where he had a part in the program presented in connection with the annual grain and potato show held in that city.

(March 3)

The month of February was rather mild and without much precipitation until the last week, when about 10 inches of snow fell in the storm of the 24th and 25th. The snow continued to drift throughout the closing week of the month, so that March opened with impassable roads and zero weather. The coldest point reached during the month was 16 degrees below zero on the 26th. The warmest was 54 degrees on the 20th.

The deep snow resulting from storms in December and January had melted away so that by February 20 the winter wheat in plots and nursery was uncovered after being well protected by snow since Movember. Four days later while the weather was still warm, the wheat again was covered by a heavy snowfall. During the brief interval of bare ground the winter wheat appeared as fresh and green as when winter began. The degree of winter survival will be determined by weather occurring later on, but with an abundance of moisture in the surface soil, the chances for a high survival are better than usual.

The writer returned on March 1 from the trip to the workers conference at St. Paul and the flax-improvement meeting in Minneapolis.

Agricultural Experiment Station, State College Station, Fargo (Flam Diseases, L. J. Boyle)

Langdon Substation, Langdon (Wheat Improvement, G. S. Smith)

MOTTAMA

Judith Basin Branch Station, Loccasin (Cereal Agronomy, B. B. Bayles)

WESTERN DASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, L. L. Davis)

Agricultural Experiment Station, moscow (Stripe Runt, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Fullman (Cereal Breeding, E. F. Gaines)

Agricultural Experiment Station, Pullman (Stinking Smuts of Wheat,
H. H. Flor)

OREGOIT

Sherman Jurnty Branch Station, Noro (Dereal Agronomy, P. E. Stephens)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)

University Farm, Davis (Jereal Agronomy, G. A. Wiebe,

Agricultural Enverment Station, Berkeley (Cereal Smuts, F. H. Briggs)





CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22

March 31, 1930 Personnel (March 16-31) and General Issue

No. 6

PERSONNEL ITEMS

- Lr. C. E. Chambliss, associate agronomist in charge of rice investigations, spent March 28 in Camden, N. J., conducting experiments in cooking and processing rice in the laboratories of the Campbell Soup Co. On the following day Mr. Chambliss inspected rice and rice products on sale by some of the leading grocers of Philadelphia.
- Mr. C. C. Fifield, associate baking technologist in cooperative baking investigations with the Grain Division of the Bureau of Agricultural Economics, returned to Washington on March 19 from visits to commercial baking laboratories in Louisville and Bowling Green, Ky., Nashville, Tenn., St. Louis, Mo., Chicago, Ill., and Toledo and Grafton, Ohio, to investigate and study methods of evaluating soft wheat flour for pastry and cake making.
- Dr. H. B. Humphrey, principal pathologist in charge of cereal-rust investigations, left Washington on March 30 for La Fayette, Ind., to confer with experiment station officials and members of the Office staff regarding the cooperative rust studies, including plans for the coming summer. He also will inspect the results of cooperative greenhouse experiments conducted during the past winter. Dr. Humphrey will go to Ames, Iowa, Lanhattan, Lans., and St. Paul, Linn., for the same pur ose. He will return to Washington about the middle of April.

The degree of Doctor of Philosophy was conferred upon <u>Karl S. Quisenberry</u> by the University of Minnesota on March 20 in absentia.

Mr. F. D. Richey, senior agronomist in charge of corn investigations, was at Ithaca, N. Y., from March 24 to 26 conferring with officials of Cornell University with reference to the progress of cooperative investigations in the morphology and cytology of maize. He also conferred with Dr. Merle T. Jenkins, of Ames, Iowa, who has been at Ithaca for the past three months making anatomical and histological studies of normal and "lazy" corn plants in the laboratories of the department of botany.

VISITORS

- Dr. M. Demerec, of the Carnegie Institute, Cold Spring Harbor, N. Y., was an Office visitor on March 22.
- Dr. M. A. Raines, associate professor of botany at Howard University, Washington, D. C., was an Office caller on March 17.
- Mr. J. D. Remsberg, director of research at the Chipman Chemical Engineering Co., Bound Brook, N. J., called at the Office on March 17.
- Mr. Arjan Singh, a Government agricultural official of the Punjab Province of India, who has just finished a course of study at the Utah Agricultural College, was an Office visitor on March 17 and 18.

- 8 A manuscript entitled "Accumulated Iron in the Nodes of Corn Flants," J. D. Sayre, was approved on March 17 for submittal to the Journal of Flant Physiology.
- 9 A manuscript entitled "Fall-Sown Oat Production," by T. R. Stanton and F. A. Coffman, was submitted on March 21 for publication in the Farmers! Bulletin series.
- 10 A manuscript entitled "The water Requirement of Crop Plants in Western South Dakota and Central North Dakota," by Arthur C. Dillman, was submitted on March 25 for publication in the Journal of Agricultural Research. (The investigations on which this manuscript is based were made by Mr. Dillman when he was a member of the Office of Alkali and Drought-Resistant Crops.)
- 11 A manuscript entitled "The Nature of Smut Resistance in Certain Selfed Lines of Corn as Indicated by Filtration Studies," by Emery R. Ranker, was submitted on March 25 for publication in the Journal of Agricultural Research.

Galley proof of Farmers' Eulletin 1621 entitled "Varieties of Hard Red Spring Wheat," by J. Allen Clark, was read on March 29.

The article entitled "Chromosome Number and the Mutation Rate in Avena and Triticum," by L. J. Stadler, appears in the Proceedings of the National Academy of Sciences 15(12): 376-881. December, 1929. (Cooperation between the Office of Cereal Crops and Diseases and the Missouri Agricultural Experiment Station.)

The article entitled "Earliness in F₁ Barley Hybrids," by <u>Harry V. Harlan</u> and <u>Mary L. Hartini</u>, appears in the Journal of Heredity 20(12): 557-560, figs. 10-11. December, 1929. (Received in February, 1930.) (Cooperation between the Office of Cereal Crops and Diseases and the Idaho Agricultural Experiment Station.)

The article entitled "Tenuous Kafir Plants," by John B. Sieglinger, appears in the Journal of Heredity 20(12): 565-566, fig. 13. December, 1929. (Received in February, 1930.)

The 44-page Report No. 10 entitled "Iowa Corn Yield Test. Results for 1929," by Joe L. Robinson and A. A. Bryan, published by the Iowa Corn and Small Grain Growers' Association, was received on March 19. (The Iowa Corn Yield Test is conducted by the Iowa Corn and Small Grain Growers' Association in cooperation with the Farm Crops Section, Iowa Agricultural Experiment Station, and the Office of Cereal Crops and Diseases, Bureau of Plant Industry, United States Department of Agriculture.)

The following articles by members of the Office staff appear in the Journal of the American Society of Agronomy for March, 1930:

Briggs, Fred M. Breeding sheats Resistant to Bunt by the Bock-Cross Method. Jour. Amer. Soc. Agron. 22(3): 239-244. March, 1930. (Geoperation between the Office of Gereal Grops and Diseases and the California Agricultural Experiment Station.)

Coffman, F. A. and G. A. Wiche. Unusual Grossing in Oats at Aberdoon, Idaho. Jour. Amer. Sec. Agren. 22(5): 245-250, fig. 1. March, 1930. (Cooperation between the Office of Gereal Groys and Diseases and the Idaho Agricultural Experiment Station.)

Meyers, Marion T. Determining the Date of Silking in Experiments with Corn. Jour. Amer. Sec. Agren. 22(3): 280-283, figs. 1-2. March, 1930. (Cooperation between the Office of Coreal Grops and Diseases and the Ohio Agricultural Experiment Station and the Chic State University.)

The article entitled "Oulture Characteristics of Physiologic Forms of Sphacelothern sorghi," by C. H. Ficke and C. O. Johnston, appears in Phytopathology 20(3): 241-249, figs. 1-2. Parch, 1930. (Cooperation between the Office of Coreal Group and Discusses and the department of botany and plant enthology, Kansas State Agricultural College.

A regrint of Misc. Circ. 108, "Copyer-Carbonate Seed Treatment for Stinking Smut of Wheat," by <u>V. F. Table and F. C. Meior</u>, was received in March 20. Since the first appearance of Misc. Circ. 108 in July, 1927, and its revision in February, 1928, more than 410,000 copies have been distributed.



CEREAL COURIER

Official Messenger of the Office of Cercal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR FUBLICATION)

Vol. 22 April 10, 1930 No. 7
Personnel (April 1-10) and Field Station (Larch 1-31, Issue

PERSONNEL ITEMS

- Lr. C. E. Chambliss, associate agronomist in charge of rice investigations, left Washington on April 3 for Georgia, Florida, and South Carolina to confer with officials of agricultural experiment stations and others interested in testing Fatna and other races.
- Mr. C. H. Kyle, senior agronomist in corn investigations, left Washington on April 5 for Tifton, Ga., to plant and take notes on the cooperative experimental corn plots. Mr. Kyle will return to Washington about April 25.
- Lr. H. S. Garrison, assistant agronomist in corn investigations, left Washington on April 5 for Tifton, Ga., and Florence, S. O. to plant, thin, and take notes on cooperative experimental corn plots. Mr. Garrison will return to Washington about the middle of May.
- Dr. Paul D. Peterson, assistant pathologist, who since October.
 1925, has assisted Mr. H. H. Mckinney in the investigations of virus diseases of theat, rye, and corn at the Arlington Emperiment Farm, left the service of the Department on March 31 to accept a position cutoide the Government. Dr. Peterson will be on a v. a. e. besis for the remainder of the fiscal year in order that he may return to finish certain portions of work already under vay.
- Mr. Glenn S. Spith, jumior agronomist in charge of the cooperative wheat experiments at the Langdon Substation, Langdon, F. Dell., who was granted six menths leave of absence without pay beginning October 1, 1929, to engage in graduate study at the Kansas Agricultural College, returned to his headquarters at Langdon, E. Dak., on April 1.

Mrs. Marion Griffiths Zehner, assistant pathologist in cereal-smut investigations, resigned her position on March 31, 1930. Mrs. Zehner, who has been connected with the Office since July, 1918, is under part-time appointment for the next three months to complete some unfinished work.

VISITORS

Mr. H. J. C. Umberger, dean and director of the Division of Extension, Kansas State Agricultural College, Manhattan, Kans., was an Office visitor on April 10.

MANUSCRIPTS AND FUBLICATIONS

- 12 A manuscript entitled "Flaxseed Production by Power Farming Methods in the Northern Great Plains," by <u>A. C. Dillman and E. A. Starch,</u> was submitted on April 1 for publication in the Farmers' Bulletin series.
- 13 A manuscript entitled "The Formative Effect of Day Length on Wheat Seedlings," by Annie M. Hurd-Karrer, was approved on April 2 for submittal to the Journal of the Maryland Academy of Sciences.
- 14 A manuscript entitled "The Behavior of Winter Wheat in Artificial Environments," by H. H. McKinney and W. J. Sando, was approved on April 2 for submittal to Science.
- 15 A manuscript entitled "Inheritance of Immunity from Flax Rust," by A. W. Henry, was approved on April 2 for submittal to Phytopathology.
- 16 A manuscript entitled "Hybrid Vigor in Oats," by F. A. Coffman and G. A. Wiebe, was approved on April 2 for submittal to the Journal of the American Society of Agronomy.
- 17 A manuscript entitled "Theat Take-All Symptoms Compared with Injuries Caused by Chinch Bugs," by <u>Hurley Fellows</u>, was approved on April 2 for submittal to Phytopathology.
- 18 A brief manuscript entitled "Control of Weeds in Flaz Cropping," by J. C. Brinsmade, Jr., was approved on April 10 for submittal to the Dakota Farmer.

The article entitled "Effect of Leaf Rust (<u>Puccinia triticina Eriks.</u>) on Yield of Wheat," by <u>E. B. Mains</u>, appears in the Journal of Agricultural Research 40(5): 417-446, figs. 1-6. March 1, 1930. (Cooperative investigations between the Office of Cereal Crops and Diseases and the Purdue University Agricultural Experiment Station.)

The article entitled "A Mosaic of Wheat Transmissible to All Cereal Species in the Tribe Hordeae," by H. H. McKinney, appears in the Journal of Agricultural Research 40(6): 547-556, figs. 1-3. March 15, 1930. (The studies here reported were conducted in part in cooperation with the Wisconsin Agricultural Emperiment Station during the seven years that the writer was stationed there.)

An article entitled "Place of Flax in Crop Rotation System," by A. C. Dillman, appears in the Dakota Farmer 50(7): 356. April 1, 1930.

FIGED STATION COMDITION AND PROGRESS

(.11 emperiments except those conducted at the Arlington Emperiment Farm, Rosslyn, Va., are in cooperation with State agricultural emperiment stations or other agencies.)

HULID IIL WILL COLST FREA (South to North)

GLORGIA

State Colleg. of Agriculture, Athens (Coroll Agronomy, R. R. Childs)

VIRGIIILA

Arlan ton Emportment Farm, Rosslyn (Small Grain Larence, y. J. W. Taylor) (April 9)

Comparatively little winterkilling occurred in the small grains during the season of 1925-30. Some actual winterkilling and injury was observable in the more tender out and borley varieties, but injury from heaving and drying out was much greater. Barley went into the winter with poor vegetative and root development, probably owing to the dry weather in November, and heaving out was greater than usual. This crep at present is below average in yield prospect, while wheat, rye, and outs are average or better.

Rye and wheat are in the early shooting stage. This is about one week earlier than average, although a few days later than last selson.

Since October, 1929, the weather has been enceptionally dry. There was a deficiency of precipitation in all months from Hovember to harch, inclusive, totaling 4.83 inches. The lowest temperature of the past winter was zero, recorded on January 31.

Arlington Experiment Farm, Rosslyn (Corn Brooding, F. D. Richey)

Arlington Experiment Farm, Rosslym (Core 1 Smuts, V. F. Taple, meting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPHI VALLEY ARE: (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)
(April 2)

Weather conditions in March were very unfavorable for certain phases of field work.

Thile the total precipitation for the month was only 2.26 inches, it was distributed throughout the month in the form of very light rains, which occurred on 13 days. Last year the total precipitation was 5.67 inches, all of which fell on 6 days. The 20-year average precipitation for March is 4.03 inches.

The temperatures in March were rather low. The highest recorded was 78 degrees F. on only one day. The lowest temperature recorded was 30 degrees F. on the 4th.

The Station plots were dragged and disked in March. The cotton plots were ridged and fertilizers were applied. Other work, incident to giving a 30-foot strip of land the entire length of the Station on the south, to the highway department for the purpose of making the right-of-way the required width, included the cutting down and removing of 17 trees, taking down and re-building 1,560 feet of fence, and constructing about 1.200 feet of roadway.

The paving of the highway is under way, and will add greatly to the appearance of the country and to the comfort of the people in this section. When the Station was established 20 years ago, the highway was an ordinary dirt road, muddy and nearly impassable during rainy periods in winter. About 10 years ago it was graded and graveled. This was a great improvement. Travel increased to such an extent that it was deemed advisable to use concrete. The plan is to hardsurface this road from New Orleans to the Texas line.

Mr. Formando Agete, Chief of the Department of Horticulture, Agricultural Experiment Station, Santiago De Las Vegas, Cuba, was a visitor on the 29th.

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

TEIMESSEE

n ricultural Experiment Station, Knoxville (Corn Breeding, L. S. Layer)

ARK-MSAS

Acricultural Experiment Station, Fayetteville (Rice Diseases, E. C. Tullis)

MISSOURI

Agricultural Experiment Station, Columbia (Rice Agronomy, B. M. Ring)

Agricultural Experiment Station, Columbia (Cereal Lyronomy, L. J.

Stacler)

OHIO

A ricultural Experiment Station, Wooster (Corn Investigations, G. H. Stringfield)

IO.A

Agricultural Experiment Station, Ames (Ont Breeding, L. C. Burnett)

Apricultural Experiment Station, Ames (Corn Breeding, A. T. Jonkins)

Agricultural Experiment Station, ames (Crown Rust of Oats, H. C.

Murphy)

ILLIMOIS

Funk Bros. Seed Co., Bloomington (Sorn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, LaFayette (Corn Rots and Metallic Poisoning, J. F. Trost, Acting in Charge)

Purdue University Agricultural Experiment Station, LaFayette (Leaf Rusts, E. B. Mains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, R. G. Shands, Acting in Charge)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, E. R. Ausemus)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger)

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston) (April 4)

The weather in the southern Great Plains area during the last two weeks of March was very unfavorable for the development of rust. Temperatures were low, and there was practically no precipitation. Consequently there has been no development of leaf rust in most of the area. At present the need for moisture is beginning to be felt. There has been hardly any spring rainfall, and the soil of many sections is becoming very dry. Wheat has made a fairly satisfactory spring growth but is progressing very slowly owing to shortage of moisture.

A very interesting situation with regard to overwintering of leaf rust obtains in the southern Great Blains this year. Entremely low temperatures occurred throughout Texas, Ohlahoma, Mansas, and Mebrasha during January. In Texas the temperatures were the lowest recorded for many years. As a consequence, winter wheats were severely frozen back and all leaf-rust infection practically disappeared. Reports from southern and central Texas indicate that there is hardly any leaf rust in those areas to date, whereas that disease was very prevalent at the same points at this time last year. A small quantity of both leaf and stem rust has been obtained from Beeville, Texas, but none can be found at College Station or Denton. There apparently was no overwintering in Ohlahoma and in Kansas only a very small amount occurred.

A few uredinic were found at Manhattan, Mans., in February and early in March, but there has been absolutely no increase in the amount since that time. The weather has been so dry and the temperatures so low that rust has been unable to spread; as a matter of fact, it is now almost impossible to find any rust whatever. Thus it seems that in place of the usual overwintering in the southern part of the Great Plains, we have this year only a very small amount. The dry weather is holding infection in check. If weather continues to be dry during April, we may expect very little leaf-rust infection in the southern Great Plains this year.

Fort Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson)

MEBRASKA

North Platte Substation, North Platte (Gereal Agronomy, N. E. Jodon)

The first replication of the date-of-seeding experiment was seeded March 15. Spring wheat in the rotation plots was seeded the same day. Last year the first date-of-seeding was made on March 27.

The weather has been mild for the past week, and it seemed probable that the varietal plots could be seeded this week. On the morning of March 17, however, the temperature was 25 degrees F. with a north wind. There also was a flurry of snow, which became a genuine snowstorm in the afternoon.

In spite of the low winter temperatures, the wheat came through without injury. Twenty-eight degrees below zero was recorded on the coldest day last winter. There was a snow cover at the time, which probably did much to prevent injury.

(April 4)

Unfavorable weather has prevailed during the latter part of March. Spring-wheat varieties were seeded on March 21 and barley varieties the next day. Strong northwest winds early in the fourth week prevented seeding. The lowest temperature of the month was 13 degrees F., which was recorded on March 25. There was an inch of frost in the ground making it impossible to use the drill until afternoon. Barley and oats were seeded in the dry-land rotations on april 4 and 5.

The winter wheat is so well established that the wind caused practically no injury. However, the plots at the west edge of the series on stubble were flayed to some extent.

It is hoped that conditions will permit the seeding of the nursery material this week.

SOUTH DAKOTA

U. S. Cercal Field Experiments, Redfield (Wheat Improvement, E. S. McFadden)

NORTH DAKOTA

Northern Great Plains Field Station, Mandan (Cercal Agronomy, V. C. Hubbard) (April.2)

The weather of the last half of March has been rather cold. Freezing temperatures occurred each night. During the day, with the exception of two days, temperatures above freezing were recorded. A minimum temperature of zero and a maximum daily temperature variation of zero to 54 degrees F. were recorded on March 19. A maximum temperature of 55 degrees was recorded on March 22. A light snowfall on March 26 resulted in a trace of precipitation.

The water in the Missourî and Heart rivers has fallen considerably since its recent high level. Travel between Mandan and Bismarck and on Highway No. 6 between the Experiment Station and Mandan has been resumed.

Frost in the Station plots is still too near the surface to permit spring plowing. Some harrowing of plots has been done in an attempt to start early weed growth before final seed-bed preparation.

Planting lists, seed treating, seed weighing and other preparations for spring seeding are well under way.

Morthern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.)

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (March 15)

The weather has been changeable this month but mostly mild. The snow has been fast disappearing until now the ground is nearly bare and the surface well saturated with moisture. Snow is predicted for tonight, however, so that winter grain may be further protected by snow until the danger of severe weather is past.

Below are given the results of a brief study of the comparative yields of different cereal crops grown on the Substation for the 10 years, 1920 to 1929, inclusive.

Ten-year average yields of eight different grain crops grown at the Dickinson Substation are given. Victory oats rank highest in pounds per acre, although it is evident that Gehu flint corn, which ranks second in pounds per acre, ranks first in food value per acre.

Red Russian, the highest yielding variety of proso, or "hog millet," averaged but 722 pounds of seed per acre or less than half the average yield of Gehu corn. Proso can be sown after it is too late to sow most other cereal crops and produces a crop of value for chickens and hogs. However, it has given comparatively low yields here in comparison with those of other cereal grains. During the past 10 years there have been three failures or near failures with the crop of proso. The highest yield in that period was 25.3 bushels per acre in 1923. Gehu flint yielded 52.8 bushels that year or twice as much as the proso.

Victory onts and Hannehen barbay have slightly exceeded Yaroslav emmer in yield of feed per acre.

The relative cost of production of the various crops should be considered in comparing the yields. Because of the cultivation given the corn, this crop was produced with the greatest labor cost. This was partly offset by the good seed bed it afforded for the subsequent crop. Rye was the cheapest crop to produce, as it was sown in grain stubble without previous cultivation. Corn was grown on spring-plowed grain stubble and the other crops usually were sown on corn land after double disking and harrowing.

Comparative yields of different cereal crops at the Dickinson Substation during the 10-year period, 1920 to 1929, inclusive.

Crop and Variety Oats	10-year average Bushels	Acre yield Pounds
Victory Corn	47.7	1526
Gehu flint Northwestern dent Barley	26.5 24.0	1484 1344
Hannchen Enmer	26.9	1291
Yaroslav <u>Theat</u>	39•6	1267
Ceres Marquis Rye	19.4 ^a /	1164 ² / 1020
Dakold Proso	13.7	767
Red Russian Flax	12.9	722
N. D. R. 52	9-1	510
Using yield of Kota for first three years.		

(April 2)

The month of April has begun with warm, drying weather so that the fields are fast drying up and becoming in good condition for the beginning of spring work. Snow has disappeared except a trace of some of the deeper drifts.

Some field work has been done in this vicinity, and some seeding in the Slope district of the State has been reported. Field work at the Substation so far has been confined to raking up and burning a few thistles. With a continuance of the present warm weather seeding should become general next week.

Seed for the varietal plots has been prepared and that for the cereal nursery is being prepared.

There was comparatively little snow in March, but the heavy snow-fall of the winter has left the surface soil well supplied with moisture. The maximum temperature was 61 degrees at noon today, which is the highest point reached since last fall.

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Langdon Substation, Langdon (Wheat Improvement, G.S. Smith)

MONTARIA

Judith Basin Branch Station, Mcccasin (Cereal Agronomy, B. B. Bayles)

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, L. L. Davis)
(April 4)

Spring conditions are at least two weeks earlier than last year in southern Idaho. With a very light winter snowfall and no spring rains, the soil contains scarcely enough moisture to insure good germination.

The cereal plots were sown on April 1 and 2, which is 15 days earlier than last year. Seeding of the cereal nurseries will be started at once.

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

Agricultural Experiment Station, Pullman (Stinking Smuts of Wheat, H. H. Flor)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D.E. Stephens)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)

University Farm, Davis (Cereal Agronomy, G. A. Wiebe)

- 7

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)



CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22 April 20, 1930 No. 8
Fersonnel (April 11-20) and Field Station (April 1-15) Issue

PERSONNEL ITELS

- Mr. C. E. Chambliss, associate agronomist in charge of rice investigations, returned to Washington on April 15 from a trip to Georgia and Florida in the interests of rice investigations.
- Dr. H. B. Humphrey, principal pathologist in charge of cereal-rust investigations, returned to Washington on April 15 from a trip to Indiana, Iowa, Kansas, and Minnesota in the interests of cereal-rust investigations.
- Dr. A. G. Johnson, principal pathologist in charge of cereal-disease investigations, left Washington on April 19 to visit Bloomington, Ill., Madison, Wis., and LaFayette, Ind., in order to confer with members of the Office staff and cooperating State officials regarding cereal-disease experiments and the preparation of manuscripts. Dr. Johnson will return To Washington about April 26.
- Lr. C. O. Johnston, assistant pathologist in charge of the cooperative leaf-rust investigations at Manhattan, Kans., was authorized to attend the meetings of the Kansas Academy of Science to be held at Hays, Kans., on April 13 and 19 and to read a paper on New and Unusual Disease Developments on Theat in Mansas.
- Lr. C. H. Kyle, senior agronomist in corn investigations, returned to Washington on April 19 from Tifton, Ga.

- Mr. H. McKinney, senior pathologist in charge of cereal-virus-disease investigations, will leave Washington on April 23 for a trip to North Carolina, Missouri, Illinois, Wisconsin, Minnesota, and Nebraska to inspect mosaic infection of wheat, obtain-data on experimental plots, and to consult with cooperating experiment station officials. Mr. McKinney will be back in Washington about May 5.
- Dr. J. D. Sayre, of Wooster, Ohio, was authorized to attend the meetings of the Ohio Academy of Science at Columbus on April 18 and 19 and to read a paper on The Use of Expressed Sap in Physiologic Studies of Corn. Dr. Sayre is agent in charge of the physiological phases of the special corn-borer research cooperative with the Ohio Agricultural Experiment Station and the Ohio State University.

MANUSCRIPTS AND PUBLICATIONS

- 19 A manuscript entitled "Inheritance of Winter Hardiness, Growth Habit, and Stem Rust Reaction in Crosses between Minhardi Winter and H-44 Spring Wheats," by <u>Karl S. Quisenberry</u>, was submitted on April 11 for publication in the Technical Bulletin series.
- 20 A manuscript entitled "Variability of Grain Sorghum Yields as Influenced by Size, Shape, and Number of Plots," by A. F. Swanson, was approved on April 12 for submittal to the Journal of the American Society of Agronomy.

The article entitled "A Cytological Study of Heterothallism in Puccinia graminis," by <u>Ruth F. Allen</u>, appears in the Journal of Agricultural Research 40(7): 585-614, pl. 1-17. April 1, 1930. (Cooperative investigations between the Office of Cereal Crops and Diseases and the California Agricultural Experiment Station.)

WESTERN BRANCH OF THE AMERICAN SOCIETY OF AGRONOMY

The Western Branch of the American Society of Agronomy will meet at Bozeman, Lont., July 30 and 31 and August 1.

MEMORANDUM FOR ALL EMPLOYEES OF THE OFFICE OF CEREAL CROPS AND DISEASES

Please do not instruct any one in the field to make express shipments, either charges collect or prepaid in cash. Every express or freight shipment must be made on Government bill of lading.

Employees can not be reimbursed for express charges paid in cash.

H. S. Smith
Junior Administrative Assistant

April 20, 1930.

FRANKING PRIVILEGES

In answer to a recent query by a field employee (incident to an item in The Official Record for October 17, 1929, page 4) addressed to the Director of Personnel and Business Administration, of this Department, relative to the use of the official frank by a Government employee in requesting publications from Government or other agencies, the publications being of value in the performance of official duties, the following abstracts from a letter of the Third Assistant Postmaster General covering the matter may be of interest:

"It is proper.....to use penalty envelopes.....
to transmit requests in the mail's free of postage when
the publications relate in any way to the official"
duties of the employees.

"The letter of this Office.... Misuse of Franking Privilege, had particular reference to the general public requesting to be furnished with copies of publications published by the Department of Agriculture on blank forms from that Department. In such cases, of course, the request when sent in the mails should have proper postage prepaid thereon, as such requests do not constitute 'official information or endorsements relating thereto,' but relate to the private husiness of the person making the request for a publication."

An item entitled "Franks May be Used by Employees Requesting Department Bulletins," appears in The Official Record for April 17, 1930.

FIELD STATION CONDITION AND PROGRESS

(All experiments except those conducted at the Arlington Experiment Farm, Rosslyn, Va., are in cooperation with State agricultural experiment stations or other agencies.)

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)
(April 18)

Oats in south Georgia are in good condition. The Norton and winter Fulghum varieties are badly infected with crown rust. Ordinary Fulghum is infected to some extent.

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

ARKANSAS

Agricultural Experiment Station, Favettoville (Rice Diseases, E. C. Tullis)

MISSOURI '

Agricultural Experiment Station, Columbia (Rice Agronomy, B. M. King)

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J.

Stadler)

OHIO

<u>Agricultural Experiment Station, Wooster</u> (Corn Investigations, G. H. Stringfield)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, H. C. Murphy)

ILLIMOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, LaFayette (Corn Rots and Metallic Poisoning, J. F. Trost, Acting in Charge)

Purdue University Agricultural Experiment Station, LaFayette (Leaf Rusts, E.B. Mains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, R. G. Shands, Acting in Charge)

MINNESOTA

Agricultural Experiment Station, University Fara, St. Paul (Wheat Breeding, E. R. Ausemus)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (April 15)

In the Woodward district crops are suffering from persistent drought. In adjoining districts local rains are occurring earlier than usual. Winter wheat on the Station is jointing early because of the dry weather and the yield probably will be reduced.

There has been a brisk demand for grain sorghum seed and the Station supply is about exhausted.

The precipitation for 1930 to date is as follows:

January, 0.56 of an inch; February, 0.02 of an inch, March, 0.18 of an inch; and April (15 days) 0. This preceded by only 0.12 of an inch in December makes the drought severe.

Prof. C. B. Cross and Mr. Carberry of the Oklahoma A. & M. College visited the Station on April 5 and inspected the wheat nursery.

KANSAS

Agricultural Experiment Station, Manhattan (Gereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston)

Fort Hays Branch Experiment Station, Hays (Gereal Agronomy, A. F. Swanson) (April 16)

In the vicinity of Hays and over much of the wheat belt of Kansas a long extended drought still prevails. In certain areas good rains have fallen. Wheat is growing on stored moisture and is making satisfactory growth. If rains come before the end of April in sufficient quantity to replace the stored moisture a good crop is in prospect. In some districts oats and barley have not germinated uniformly owing to the fact that the surface soil is dry.

There will be meetings of the Kansas Academy of Science at Hays on April 18 and 19. The Annual Livestock and Grain Judging contest for vocational high school students and 4-H Club members will be held at the Hays Station on April 25. The Annual Round-Up will follow on April 26. The livestock feeding experiments will be reviewed, and a program of general interest to farmers of western Kansas will be presented.

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, N. E. Jodon) (April 16)

The weather of the first half of April has been dry and warm. The spring-grain nurseries were seeded during the first four days of the month, and emerged on the 10th and 11th after some very warm days.

Plants in the varietal plots emerged at the same time, although the spring wheat and barley had been seeded 10 days earlier. The first replication in the date-of-seeding experiment, sown on March 15, emerged on April 17.

Moisture conditions have not become serious. There was some soil blowing because of the dried out surface. There has been a sufficient supply of subsoil moisture, however. Precipitation of 0.17 of an inch and 0.36 of an inch were recorded on April 15 and 16, respectively.

SOUTH DAKOTA

U. S. Cereal Field Experiments, Redfield (Wheat Improvement, E. S. McFadden)

NORTH DAKOTA

Northern Great Plains Field Station, Mandan (Cereal Agronomy, V. C. Hubbard)

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (April 16)

The weather of the first part of April was generally dry and warm. The drought since March 1 was broken by rain amounting to 1.04 inches on April 11, 14, and 15. Rain is still falling. The rain has prevented the seeding of wheat on the Station for which preparations have been completed.

The maximum temperature for the first half of April was 78 degrees on April 4, and the minimum, 26 degrees on April 6. No freezing temperatures have been recorded since April 6.

The warm weather early in April has made it possible to get field work done somewhat earlier than usual. The land for flax varietal plots was disked April 12. Weeds were already starting to grow at that time. The recent rain and continued warm weather should make it possible to clean up weeds somewhat earlier than usual.

The ice on the Missouri River broke up early in April, when the river was at a low stage, and went out without causing any appreciable rise in the level of the stream.

Dickinson Substation, Dickinson (Cereal Agronomy, R. 7. Smith)

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Langdon Substation, Langdon (Wheat Improvement, G. S. Smith)

MONTANA

Judith Basin Branch Station, Moccasin (Cereal Agronomy, B. B. Bayles)

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, L. L. Davis) (April 19)

Seeding of the oat nursery has been completed except for some hybrid material yet to be received from the greenhouse at the Arlington Experiment Farm. A good rain fell on April 14, which was very favorable for germination and emergence of the various cereal sowings. In addition, to the regular yield-test nursery and other oat-breeding material received from Washington, D. C., more than 1,000 head rows were sown of the new selections made last summer from various smut-resistant hybrids. Seed of all of the selections involving Markton as one parent was inoculated with smut spores.

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

Agricultural Experiment Station, Pullman (Stinking Smuts of Wheat, H. H. Flor)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)

University Farm, Davis (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)



CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR FUBLICATION)

Vol. 22 April 30, 1930 No. 9
Personnel (April 21-30) and General Issue

TERSOLIEL ITEMS

Dr. C. E. Leighty, principal agronomist in charge of eastern wheat investigations, left Washington on April 30 for Illinois to confer with experiment station officials regarding cooperative cereal experiments. Dr. Leighty expects to proceed from St. Louis on May 4 to San Antonio, Tex., to confer with Mr. G. T. Ratliffe, of the U. S. Experiment Farm. From May 6 to 31, he will be at the U. S. Field Station, Sacaton, Ariz., to take notes on and harvest wheats in the foreign introduction detention nursery. On his return trip in June, Dr. Leighty will make stops at Knoxville, Tenn., and Swannanca, and Statesville, N. C., arriving in Washington about June 15.

Mr. George F. Sprague, assistant agronomist in corn investigations, went to Ithaca, N. Y., on April 23 to confer with Dr. R. A. Emerson, head of the department of plant breeding, Cornell University, on certain phases of corn genetics.

VISITORS

Prof. J. H. Weethling, of the University of Stellenbosch, South Africa, was an Office visitor on April 25.

MANUSCRIPTS AND PUBLICATIONS

- 21 A manuscript entitled "Sterility in Rice Hybrids," by Jenkin T. Jones, was approved on April 21 for submittal to the Journal of the American Society of Agronomy.
- 22 A manuscript entitled "Titration Curves of Etiolated and of Green Wheat Seedlings Reproduced with Buffer Mixtures," by Annie M. Hurd-Karrer, was approved on April 30 for submittal to Plant Physiology.

Galley proof of article entitled "Some Growth Curves of Barley Kernels," by Mary L. Martini, H. V. Harlan, and M. N. Pope, for publication in Plant Physiology, was read on April 28.



CEREAL COURIER

Official Messenger of the Office of Cereal Crcps and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22 May 10, 1930 No. 10
Personnel (May 1-10) and Field Station (Apr. 16-30) Issue

PERSONNEL ITEMS

Mr. J. Allen Clark, senior agronomist in charge of western wheat investigations, will leave Washington on May 17 to visit field stations in Illinois, Kansas, Oklahoma, Texas, Arizona, California, Oregon, Washington, Idaho, Utah, Wyoming, Nebraska, and Iowa for the study of wheat varieties and hybrids in breeding nurseries. Mr. Clark will return to Washington about June 19.

Mr. W. T. Craig, agent in the cooperative cereal breeding investigations at the Cornell Agricultural Experiment Station, Ithaca, N. Y., will leave about the middle of May for points in Kansas, Arizona, California, Nebraska, and Iowa to study, take notes on and harvest wheat hybrids in the cooperative breeding nurseries.

Mr. A. C. Dillman, associate agronomist in charge of flax investigations, will leave Washington about May 15 for San Antonio, Tex, to inspect and take notes on cooperative flax experiments and to confer with cooperating officials. Mr. Dillman also will look over the experiments with flax in southeastern Kansas.

- Mr. C. C. Fifield, associate baking technologist in cooperative baking investigations with the Grain Division of the Bureau of Agricultural Economics, attended the meetings of the American Association of Cereal Chemists at Chicago from May 5 to 9.
- Dr. H. V. Harlan, principal agronomist in charge of barley investigations, will leave Washington about May 15 for Manhattan, Kans., to confer with officials of the Kansas Agricultural Experiment Station regarding cooperative barley experiments. Dr. Harlan will then go to Sacaton, Ariz., to study barley varieties in the cooperative nurseries at the U. S. Field Station. Upon completion of this work similar studies will be made at the Aberdeen Substation, Aberdeen, Idaho, and at University Farm, Davis, Calif., and Corvallis and Moro, Oreg.
- Dr. A. G. Johnson, principal pathologist in charge of cereal-disease investigations, will leave Washington on May 13 for St. Louis, Mo., to meet representatives from Missouri, Kansas, and Illinois and make field inspections for flag smut of wheat in the vicinity of Granite City, Ill. Upon completion of this work Dr. Johnson will go to Fayetteville, Ark., and to points in Alabama, Louisiana, Texas, Oklahoma, Kansas, Wisconsin, and Indiana to confer with field employees of the Office and officials of agricultural experiment stations regarding cooperative cereal-disease investigations.
- Mr. M. A. McCall, principal agronomist in charge, left Washington on May 10 to confer with officials of agricultural experiment stations and field employees of the Office concerning cooperative investigations of cereal crops and diseases. The following States will be included in his itinerary: Illinois, Kansas, Missouri, Arkansas, Tennessee, Louisiana, Texas, Oklahoma, Arizona, California, Oregon, Idaho, Washington, Utah, Wyoming, Colorado, Nebraska, Iowa, Indiana, and Ohio. Mr. McCall expects to be back in Washington by the middle of June.
- Mr. J. W. Taylor, associate agronomist in charge of small-grain agronomy at the Arlington Experiment Farm near Washington, D. C., left on May 8 for a four-day trip in Virginia to inspect cereal experiments and to observe wheat conditions in general.
- Mr. Taylor will leave about May 15 on a trip to Manhattan, Kans., Sacaton, Ariz., Davis, Calif., Corvallis and Moro, Oreg., and Aberdeen Idaho, to take notes on and assist in the harvest of cereals in cooperative breeding nurseries.

Mr. E. C. Tullis, agent in the cooperative investigation of rice diseases at Fayetteville, Ark., will start about May 17 on a trip of inspection of rice fields in Arkansas, Louisiana, and Texas. He will return to his headquarters about the end of June.

VISITORS

Dr. F. D. Farrell, President of the Kansas State Agricultural College, was an Office visitor on May 7.

MANUSCRIPTS AND PUBLICATIONS

- 23 A manuscript entitled "Hardiness and Yield of Winter Wheat Varieties," by <u>Karl S. Quisenberry</u> and <u>J. Allen Clark</u>, was submitted on May 1 for publication in the series of Department Circulars.
- 24 A manuscript entitled "Oat Varieties Highly Resistant to Crown Rust," by H. C. Murphy and T. R. Stanton, was approved on May 9 for submittal to the Journal of the American Society of Agronomy.
- 25 A manuscript entitled "A Genetic Study of Wheat-Rye Hybrids and Back Crosses," by <u>Victor H. Florell</u>, was submitted on May 10 for publication in the Journal of Agricultural Research.
- 26 A manuscript entitled "A Cytologic Study of Wheat-Rye Hybrids and Back Crosses," by <u>Victor H. Florell</u>, was submitted on May 10 for publication in the Journal of Agricultural Research.

The paper entitled "Heritable Characters of Maize XXXIV---Root-less," by Merle T. Jenkins, appears in The Journal of Heredity 21(2): 79-81, fig. 14. February, 1930. (Cooperation between the Office of Cereal Crops and Diseases and the Iowa Agricultural Experiment Station.)

Louisiana Agr. Expt. Sta. Bul. 205 entitled "Report of the Rice Experiment Station for the Years 1928-1929," by <u>J. Mitchell Jenkins</u>, has been received, bearing date of March, 1930. (Cooperation between the Office of Cereal Crops and Diseases and the Louisiana Agricultural Experiment Station.)

The paper entitled "The Formative Effect of Day Length on Wheat Seedlings," by Annie May Hurd-Karrer, appears in The Journal of the Maryland Academy of Sciences 1(2): 115-126, figs. 1-5. April, 1930.

The paper entitled "Nuclear Divisions in the Pollen Mother Cells of Triticum, Aegilops, and Secale and Their Hybrids," by A. E. Longley and W. J. Sando, appears in the Journal of Agricultural Research 40(8): 683-719, pls. 1-4, figs. 1-9. April 15, 1930. (The junior author is a member of the staff of the Office of Cereal Crops and Diseases.)

The paper entitled "The Inheritance, Interactions and Linkage Relations of Genes Causing Yellow Seedlings in Maize," by Merle T. Jenkins and Martin A. Bell, appears in Genetics 15(3): 253-282. May, 1930. (Cooperation between the Office of Cereal Crops and Diseases and the Iowa Agricultural Experiment Station.)

The following five articles written by members of the scientific staff of the Office of Cereal Crops and Diseases appear in the Year-book of Agriculture 1930, received May 6:

Earley Scab Effectively Controlled by Rotations and Clean Fall Plowing, by James G. Dickson.

Harvesting Flax with Combine Succeeds in Northern Great Plains, by Arthur C. Dillman.

Black Stem Rust of Cereals Has More Than 60 Physiologic Forms, by M. N. Levine and E. C. Stakman.

Wheat Protected from Black Stem Rust by Dusting with Sulphur, by E. C. Stakman and Lee H. Person, Jr.

Oats of Fulghum Variety Win Place in Southern States, by <u>T. R. Stanton</u> and <u>F. A. Coffman</u>.

[N. B. According to The Official Record 9(16): 5, April 17, 1930, the latest Yearbook of Agriculture is dated 1930 instead of 1929. There is no yearbook bearing the date 1929. This change in the method of dating is made to conform with the practice commonly followed in the publication of yearbooks, whereby such volumes are designated by the year in which they are printed rather than by the year surveyed.]

ANNOUNCEMENT

Mr. Max A. McCall, principal agronomist in charge of the agronomic section, and assistant head, of the Office of Cereal Crops and Diseases, since June 1, 1924, was designated by the Secretary of Agriculture as Principal Agronomist in charge of the Office of Cereal Crops and Diseases, effective May 1, 1930, according to an announcement by Dr. Wm. A. Taylor, Chief of the Bureau of Plant Industry, in B. P. I. Memo. 498, dated April 30, 1930.

Mr. McCall has been acting in charge of the Office since the resignation of Dr. C. R. Ball in December, 1929. In his new capacity he will have administrative supervision and direction of the scientific and related work of the Office.

Mr. McCall was born at Jamestown, Kans., October 20, 1888. He received the degree of B. S. in Agriculture from the Oregon Agricultural College in 1910, and in 1910-11 he became instructor of agriculture at the Davenport High School, Davenport, Wash. In 1911-12 he was instructor in agronomy at the Oregon Agricultural College, and in 1912-14, instructor of agriculture at the Klamath County High School, Klamath Falls, Oreg. He was county agricultural agent of Klamath County, Oregon, in 1914. He was in charge of field demonstrations of the dry-land department of the State College of Washington in 1914-15, and in charge of the Waterville Demonstration Farm, Waterville, Wash., in 1915. In October, 1915, Mr. McCall was made superintendent of the Adams Branch Experiment Station, Lind, Wash. During the period from October, 1915, to September 30, 1920, he also served as agent of the Office of Cereal Crops and Diseases, then the Office of Cereal Investigations. In 1922 he received the degree of M. S. in Agriculture from the State College of Washington.

From October 1, 1926, to June 11, 1927, Mr. McCall was granted leave of absence by the Office of Cereal Crops and Diseases to pursue graduate study at the University of Wisconsin, majoring in plant physiology.

Mr. McCall is the author of several bulletins on cereal crops, published by the Washington Agricultural Experiment Station, and of later articles on dry-farming investigations.

FIELD STATION CONDITION AND PROGRESS

(All experiments except those conducted at the Arlington Experiment Farm, Rosslyn, Va., are in cooperation with State agricultural experiment stations or other agencies.)

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs) (April 23)

Winter oats at Athens were damaged by cold weather and the crop will be rather short. Some of the oat crosses received from the Arlington Experiment Farm, Rosslyn, Va., last fall came through the winter nicely, however, and may be of some promise for north Georgia.

The difference in rust resistance of the varieties of winter oats that are being grown at Tifton is striking. Norton oats, which were about 50 per cent headed, showed a very bad infestation of crown rust. The Winter Fulghum (699-2011) was rusted almost as badly. Other strains of Fulghum showed some rust but not so much as the two varieties mentioned. Appler and other Red Rustproof strains appeared to be fairly free. On the whole the crop at Tifton is good.

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Form, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)
(May 8)

The rice nursery was seeded on April 16. All increase and rotation plots were seeded from April 22 to 25. In most plots the seed bed was in excellent condition.

All of the experimental cotton plots were seeded early in April. In the main, stands are very good.

Weather conditions of the greater part of April were favorable for field operations. The total precipitation was only 1.32 inches, or 0.48 of an inch less than the total for April, 1929, and 2.10 inches less than the 20-year average for April. Rain was needed the latter part of the month to enable rice and other crops to germinate. It was necessary to irrigate many rice fields in southwestern Louisiana to cause complete germination.

Seedling blight was rather damaging in some commercial fields early in April and some reseeding was necessary. The disease gained headway wherever seeding was done in March when the weather was rather cool and wet, resulting generally in poor stands.

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

ARKANSAS

Agricultural Experiment Station, Fayetteville (Rice Diseases, E. C. Tullis)

Missouri

Agricultural Experiment Station, Columbia (Rice Agronomy, B. M. King)

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

OHIO

Agricultural Experiment Station, Wooster (Corn Investigations G. H. Stringfield)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, H. C. Murphy)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, LaFayette (Corn Rots and Metallic Poisoning, J. F. Trost, Acting in Charge)

Purdue University Agricultural Experiment Station, LaFayette (Leaf Rusts, E. B. Mains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, R. G. Shands, Acting in Charge)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, E. R. Ausemus) (May 3)

The weather in April was favorable for the seeding of spring grains. Wheat was seeded about two weeks earlier than last year. While the weather has been dry, there was sufficient moisture in the soil to germinate the seed sown. Rains during the past three days have been very beneficial to all cereal crops.

Seeding of all the experiments with wheat has been completed. The field and rod-row nursery plots have emerged with good stands. The Rust Nursery and Disease Garden material was sown on April 19 to May 2. The earlier seedings have emerged.

Notes have been recorded on winter injury to the winter wheat. There was almost complete winterkilling in the plant-row material.

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (May 3)

There has been a brisk demand for sorghum seed this spring. The acreage of grain sorghums and broomcorn probably will be greater than in 1929.

Rains have finally come. Wheat, both in the varietal plots and in the nursery, is in various stages of heading. Wheat looks much better since the rain, but the straw will be short and the yields probably will be reduced.

The minimum temperature for the last half of April was 45° on the 17th; maximum, 87° on the 21st. The precipitation for April was 2.58 inches, all being recorded in the latter half of the month.

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker) (April 21)

A trip was made to Hays and Colby, Kans., in the week of April 14 to study winter survival and spring stands of wheat varieties, selections, and crosses in nursery rows and plots.

There was hardly any winterkilling at Hays, but at Colby, Superhard Blackhull and imported Russian Turkey (Cooperatorka) wheats were badly killed. Blackhull and Tenmarq were thinned out somewhat by winterkilling but have stand enough left to make a normal, or nearly normal, yield with average weather conditions from now to harvest.

In the winter-wheat nursery at Colby, some of the F5 back crosses of Tenmarq x Kanred and Kanmarq x Kanred appear very promising. Other crosses being tested there in smaller numbers and in earlier generations, and which appear especially promising, are Tenmarq x Minturki and Tenmarq x Red Winter. The last named is a hardy Turkey type, resistant to Hessian fly, to which Tenmarq is very susceptible.

Plans for the 1930 grain-sorghum nursery experiments at Hays, Manhattan, and other cooperating stations were discussed with Mr. A. F. Swanson at Hays.

Rains at Manhattan in the past week have totaled more than three inches. The seedings in the spring nursery are emerging satisfactorily. Winter wheat in the nursery and at the farm is making fine growth.

Prof. S. C. Salmon made a trip to Columbus, Kans., on April 14 and obtained some very fine pictures and data on winterkilling. Kawvale came through very well. Fulcaster and Currell were badly killed.

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Theat Leaf Rust, C. O. Johnston) (April 29)

The weather for the greater part of April has been rather cold and unfavorable for plant growth. Trees and shrubs that had started growth in February and early March have made remarkably slow progress in April. Wheat growth has been very slow over most of Kansas because of the dry weather. A total of 4.5 inches of rain fell at Manhattan on April 12, 14, and 15, however, and wheat has made rapid strides in this vicinity since that time.

The writer visited 11 counties of north-central Kansas on April 17 and 19 on a trip to Hays and return. Theat in all of the counties seemed rather short for this time of year and was thin in some fields. In general, however, it seemed to have stood the drought well and to give promise of a fair crop with favorable conditions from now on. Considerable leaf rust was present in this area last fall, but no traces of it could be found at this time. The dry, cool spring has prevented the development of leaf rust in Kansas so far this spring. A little leaf rust is present in Oklahoma and northern Texas but in a much smaller quantity than at this time last year. The present rainy weather is favorable but temperatures are still too low for leaf-rust infection.

Fort Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson)

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, N. E. Jodon) (May 2)

A precipitation of 3.61 inches was recorded at North Platte for the period from April 15 to 30, inclusive. Rainfall occurred on 10 of the 16 days. Evaporation was correspondingly low.

Seeding on the third date in the date-of-seeding experiment was made on April 21 and emerged May 1. All small grain crops have made a luxuriant growth in this period.

The western division of the Nebraska Smith-Hughes contest was held at North Platte on April 17 and 13. Eighteen schools were represented. Six teams took part in the grain-grading demonstration, and/in the grain-judging and identification contest. About 270 boys were at the station for the contests.

SOUTH DAKOTA

U. S. Cereal Field Experiments, Redfield (Wheat Improvement, E. S. McFadden)

NORTH DAKOTA

Northern Great Plains Field Station, Mandan (Cereal Agronomy, V. C. Hubbard) (May 2)

The weather of the last half of April was not so cold as usual. Temperatures in the upper four inches of soil varied from 35° to 63° F., with a mean of 48.3° F.

Germination of seed has been about average. A 40-row oats nursery sown on April 12 emerged on the 27th. A second set of 40 rows sown on April 22 emerged on May 2. Three light rains in the week of April 13 caused a delay of a week in the seeding of varietal plots.

Twenty varieties of wheat and 12 varieties of oats were sown in 50th acre plots on April 21. The wheat is emerging at this date. Most of the oats seeds have germinated but have not yet emerged.

Nine barley varieties were sown in plots on April 29.

In the rod-row nursery about 2,600 rod rows and 490 5-foot rows of wheat, 105 rod rows of barley, and 21 rod rows of oats were sown on April 23, 24, 28, and 29. Some germination has taken place, but no varieties have emerged to date.

Some 500 rod rows remain to be seeded. Most of these will be space-planted inheritance material.

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (May 2)

The season to date is somewhat earlier than usual. The mild weather which prevailed during the early part of April continued throughout the entire month. Freezing temperatures were recorded on only five days in the last half of April and on only nine days in the entire month. The maximum temperature for the last half of April was 71° on April 29, and the minimum, 25° on April 20, 21, and 23. The average mean temperature in April was 49°, which is 7° higher than the average for the past 16 years.

The precipitation recorded for the last half of April amounted to 0.67 of an inch. About 2 1/2 inches of snow on April 18 and 19 prevented seeding the first plots of flax in the date-and-rate-of-seeding-and-tillage experiment on April 19. The first seeding was made on April 21. The plants are just emerging today. The second seeding was made on April 30.

Weeds, especially Russian thistles, are making much more rpaid growth than usual at this time of the year. It should be possible to make a more thorough job of cleaning up weeds on flax ground and to seed the flax varietal plots earlier than usual.

<u>Dickinson Substation, Dickinson</u> (Cereal Agronomy, R. W. Smith) (April 29)

Oat varieties were sown in the plots on April 21 and 22, and the varieties, selections, and hybrids in nursery rows on April 24 and 25. The material for the study of natural crossing under the environment of Dickinson also has been sown. Soil moisture conditions are excellent so that a uniform stand should be obtained.

(May 1)

Seeding of spring wheat, oats, and barley in both plots and nursery has been completed and most of the grain is emerging about a week earlier tham usual. Moisture conditions have been very good and the stand of cereal grains should be more uniform than usual.

The May 1 date of seeding with oats, barley, flax, and emmer, and the rate and date of seeding spring wheat in plots was completed this morning. Four more seedings of Linota flax will be made at 10-day intervals and one more of wheat, oats, barley, and emmer, the latter about the middle of May.

Varietal plots of flax, proso, and corn remain to be seeded. Thirty-two varieties of spring wheat, 21 of oats, and one of Yaroslav emmer have been sown in quadruplicated 56th-acre plots, and 17 of barley in triplicated plots. Seven varieties of grain were sown in the combine experiment in 1929.

The best time made in seeding this year was the seeding of 21 spring-wheat varieties in 84 separate 56th-acre plots in one forenoon. Cleaning out the drill between varieties requires quite a little time.

The soil thermograph showing the soil temperature at a depth of two inches in the nursery recorded a downward curve in temperature during the eclipse on April 28. Being at 62° at the beginning of the eclipse, the temperature dropped to 60° and, after the eclipse was over, rose to 62° and above. Ordinarily the temperature would be rising steadily during the period in which the eclipse occurred here.

The mean temperatures for April have been somewhat above normal especially during the first half of the month. The maximum was 79° and the minimum, 19°, the latter being recorded the morning of April 1. The total precipitation for the month was 1.95 inches or nearly 3/4 inch above normal for April.

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Langdon Substation, Langdon (Wheat Improvement, G. S. Smith)
(April 16)

The winter at Langdon has been characterized by its severity in length, low temperatures and quantity of snow. In November, subzero temperatures were recorded on 8 days, in December on 22 days, in January on 28 days, in February on 9 days, and in March on 9 days. The lowest temperature was -40° on January 9. The total precipitation for the six months from October, 1929 to March, 1930, inclusive, was 8.34 inches, of which 7.75 inches fell in the form of snow, or the equivalent of about 6 1/2 feet of snow. As a result, the ground is supplied with plenty of moisture and the moist subsoil should give the grain a good start.

The weather for the first two weeks of April has been consistently warm and will enable field work to start much earlier than was anticipated before the snow melted.

The nursery ground has been harrowed twice and is in very find condition for seeding which will begin as soon as weather permits. The variety plot ground is still too wet to permit any working, but is in good condition. Very little seeding has been done in the community because of the wetness of the fields.

(May 1)

Twenty one hundred rod rows of the rod-row nursery were seeded on April 24, 25, and 26. This is 10 days earlier than the nursery was sown last year. The portion remaining to be seeded is largely hybrid material. On April 25 the wheat varieties were put in and on the next day, the wheat and flax plots for the combine study project. The wheat rotations on the substation have been seeded, as have most of the larger fields.

Peculiar weather conditions have obtained for the past two weeks. In general the conditions have been unsettled, but there has been no significant precipitation. The first week of the period was rather cold, and light frosts hindered field work in the mornings. The past six days have been characterized by heavy cloudiness. A south wind has brought warmer weather, giving vegetation its first real start. There is just sufficient moisture in the soil to enable the seed in the nursery to germinate, though none of it has yet emerged.

MONTANA

Judith Basin Branch Station, Moccasin (Cereal Agronomy, B. B. Bayles)

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, L. L. Davis)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

Agricultural Experiment Station, Pullman (Stinking Smuts of Wheat, H. H. Flor)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

Agricultural Experiment Station, Corvallis (Foot Rots of Wheat, Roderick Sprague)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones) (May 2)

Seeding at the Station is nearly completed, and nearly all plots have been irrigated. The weather is rather cloudy and unsettled and almost too cool for rapid germination of the seed.

Approximately 75 per cent of the commercial acreage has been sown and is being irrigated. While seeding is somewhat later than last year, it is somewhat earlier than normal.

University Farm, Davis (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)



CEREAL COURIER

Official Messenger of the Office of Careal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22 May 20, 1930 No. 11
Personnel (May 11-20) and Field Station (May 1-15) Issue

PERSONNEL ITEMS

Dr. Charlotte Elliott, associate pathologist, will leave Washington on May 22 to make field studies of bacterial diseases of sorghum at several points in Texas. Dr. Elliott will be away about two weeks.

Dr. K. S. quisenberry, associate agronomist in western wheat investigations, will leave Washington on May 27 for Woodward, Okla., where he will look over the cooperative experiments at the Woodward Field Station. He will then travel by Government-owned automobile to various points in Oklahoma, Texas, Kansas, Nebraska, Colorado, and Wyoming to take notes on cooperative smut nurseries and discuss plans for future cooperative work.

Mr. T. R. Stanton, senior agronomist in charge of oat investigations, will leave Washington on May 31 for an extended trip to study and assist in the harvest of cooperative experiments with oats and to confer with officials of agricultural experiment stations relative to planning new experiments. Mr. Stanton also expects to confer with oatmeal millers in Iowa, California, and Oregon about the development of more satisfactory varieties of cats for milling.

Stops will be Laue at Manhattan, Kans., Stillwater and Carrier, Okla., Stuttgart, Ark., Baton Rouge, La., Denton and San Antonio, Tex., Tucson, Ariz., Bard, Pomona, Los Angeles, Berkeley, and Davis, Calif., Corvallis and Moro, Oreg., Puyallup and Pullman, Wash., Mescew, Lusho, and Havre and Moccasin, Mont.

VISITORS

M. Besil M. Bensin, of the Agricultural Association of the Czech-slovak Republic, Frague, formerly senior specialist of the Department of Agriculture, Petrogram, Russia, was an Office visitor on May 19.

ANNOUNCEMENTS

The summer meetings of the Corn Belt Section of The American Society of Agronomy will be held at Lincoln, Nebr., on June 23 and 24, according to an announcement by f. D. Keim, professor of agronomy, Nebraska Agricultural Experiment Station, Lincoln, Nebr. The Two-day session will be devoted largely to an inspection of the crops and soils work of the College of Agriculture and Experiment Station.

The members of the Agronomy staff are pleased to extend to those interested a most corolal invitation to visit them at that time. An invitation also is extended to visit the Agronomy Field Day at the North Platte Substation on June 26. Although not included as a part of the summer meetings, some may wish to inspect the dry-land agricultural investigations of this station.

Further announcements and program will be mailed about the first of June.

The Agronomic Workers of the Facific Northwest will meet at the Marcus Whitman Hotel, Walla Walla, Wash., on June 4 to discuss plans for an enlarged wheat improvement program for the Facific Northwest.

MANUSCRIPTS AND PUBLICATIONS

27 A manuscript entitled "Physiologic Specialization and Mutation in Phlyctaena linicola Speg.," by H. A. Rodenhiser, was approved on May 16 for submittal to Phytopathology.

Galley proof of Circular 119 entitled "Relation of Dust Fungicides to Flow of Small Grains through Drills and to Drill Injury," by R. W. Leukel, was read on May 14.

The article entitled "Chemical Seed Treatments for Sorghums," by A. F. Swanson and R. E. Getty, appears in the Journal of the American Society of Agronomy 22(5): 472-475. May, 1930. (Cooperation between the Office of Coreal Crops and Diseases, the Office of Forage Crops and Diseases, and the Kansas Agricultural Experiment Station.)

FIELD STATION CONDITION AND PROGRESS

(All experiments except those conducted at the Arlington Experiment Farm, Rosslyn, Va., are in cooperation with State agricultural experiment stations or other agencies.)

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love) (May 21)

The weather during the early spring was not very favorable to winter wheat. The wheat on the experimental grounds came through the winter rather poorly and that in the nursery is very spotted because the early spring was unusually dry. Recent showers have helped considerably and the wheat is now growing nicely, although it will remain uneven throughout the growing period.

Owing to good conditions for soil preparation, we were able to sow the hybrid nursery of oats and barley in the plant breeding gardens and the regular field trials under ideal conditions. The grain is up now and growing nicely. In addition to the experiments here at Ithaca, several tests have been sown in different counties. These have included both oats and barley.

A large number of additional hybrids of wheat and oats were made in the greenhouse. These include a rather extensive series, looking toward practical results with both wheat and oats.

The early reports from the farmers who are growing seed grain for inspection and registration indicate that we shall have a larger acreage than usual for inspection this year.

Mr. W. T. Craig has gone to California by way of Sacaton, Ariz., to take notes and harvest our hybrid material at Davis. While at Sacaton he will look over particularly the collection of wheat varieties that were sent in from China in 1929.

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

ARKANSAS

Agricultural Experiment Station, Fayetteville (Rice Diseases, E. C. Tullis)

MISSOURI

Agricultural Experiment Station, Columbia (Rice Agronomy, B. M. King)

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

OHIO

Agricultural Experiment Station, Wooster (Corn Investigations, G. H. Stringfield)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Stat.on, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, H. C. Murphy)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, LaFayette (Corn Rots and Metallic Poisoning, J. F. Trost, Acting in Charge)

Purdue University Agricultural Experiment Station, LaFayette (Leaf Rusts, E. B. Mains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, R. G. Shands, Acting in Charge)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, E. R. Ausemus)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKL AHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (May 17)

There appears to be a scarcity of sorghum seed, both grain and forage, in this region.

There have been heavy rains since the drought of a month ago, 7.68 inches having been recorded on eight days in the first half of May. Destructive hailstorms have been reported in the district east and south of Woodward. So far the wheat crop has been subjected to adverse weather conditions.

The minimum temperature for the first half of May was 45° on the 12th; maximum, 85° on May 1, 4, and 5.

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Monhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston)

Fort Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson)

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, N. E. Jodon) (May 15)

Wet weather continued through the first part of May. A rain of over 1 1/3 inches fell during the afternoon of May 3. Over an inch and a half fell on May 10. Rains and wet weather interfered to some extent with the preparation of corn ground.

Corn variety and hybrid tests under irrigation were planted May 14. The irrigated corn varieties were space-planted by hand in replicated 33-hill rows. Nine varieties and hybrids, with Substation-yellow in every third block as a check, were planted in 12 replications of 2-row blocks.

Corn plantings on the table land were begun May 15 but were interrupted by rain. Thirteen varieties with Substation-white as a check are to be planted in the 2-row blocks (1/50-acre plots) on blank listed ground. A reduced seed corn treatment test also is being carried on again this year. The remaining corn plots will be hand-planted hybrid comparisons.

SOUTH DAKOTA

U. S. Cereal Field Experiments, Redfield (Wheat Improvement, E. S. McFadden)

NORTH DAKOTA

Northern Great Plains Field Station, Mandan (Cereal Agronomy, V. C. Hubbard) (May 16)

The oats and barley varieties sown in 50th-acre plots on April 21 and 29 emerged on May 2 and 10, respectively.

Seven hundred and seventy-six rows of inheritance material, kernels spaced three inches apart in the row, were sown on May 3. The surface soil was rather dry at the time of seeding. Continuous cloudy, cool weather was conducive to slow germination. This material emerged May 16.

With the exception of May 4 and 15 some rain was recorded on each day in the first half of May. The precipitation varied from a trace on May 8, 10, and 14 to 1.04 inches on May 11. The total precipitation was 2.23 inches.

Temperatures for the first half of May varied from a maximum of 70° on May 1 to 29° on May 15. The mean temperature was 47°.

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (May 16)

Flax sown April 30 in the date-and-rate-of-seeding-and-tillage experiment emerged May 14 with good stands.

Preparation of land for seeding flax varietal plots and nursery was prevented by nearly continuous wet weather from May 5 to 14, inclusive. The third seeding in the date-and-rate-of-seeding-and-tillage experiment was made on May 10. The land was prepared and the seed sown after 3 P.M. The land was too wet for disking earlier in the day.

Final preparation of the land for seeding varietal plots and nursery was made yesterday afternoon and this morning. The land was staked out and marked this afternoon. The varietal plots and the spaced nursery rows will be seeded tomorrow if weather permits.

The weather of the first half of May was generally cold and wet. Temperatures were colder on the average during this period than for the entire month of April. Freezing temperatures were recorded on six days, May 5 to 9, inclusive, and on May 15.

The total precipitation for the first half of May was only 0.2 of an inch lower than the average for the entire month of May in the past 55 years. About 1 1/4 inches of wet snow covered the ground the morning of May 6. Precipitation recorded for May 5 was 0.36 of an inch. From May 5 to May 14, inclusive, some precipitation was recorded every day.

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (May 16)

The seeding of the small grains is completed both in plots and nursery with the exception of flax and proso, and wheat in the date-of-seeding smut experiment. The last date of seeding for wheat, oats, barley, and emmer in plots was completed today. Varietal plots of corn and about half of the corn nursery were planted today.

Most of the grain in varietal plots and nursery has emerged with unusually good stands owing to a sufficient amount of soil moisture for uniform germination.

An increase in wheat acreage is reported in this township but probably that is not typical of this part of the state.

Cool, showery weather has prevailed during most of the first half of May. Precipitation was recorded on 12 days, although the total to date has been only 1.04 inches. The mean temperature has been lower than in April, when the mean temperature was approximately the same as the normal mean for May. The lowest temperature so far recorded was 27 degrees this morning; no apparent damage was done to cereal crops.

The frequent showers, and a light snow on May 8, interfered with field work, but owing to favorable weather in April, crops and spring work were more advanced than usual when the cool, wet weather delayed the progress of both.

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Langdon Substation, Langdon (Wheat Improvement, G. S. Smith)

MONTANA

Judith Basin Branch Station, Moccasin (Cereal Agronomy, B. B. Bayles)
[May 17]

Spring seeding on the Station was completed about May 1, and all the small grains emerged with good stands during the first week of May. Since that time temperatures have been below normal. On May 6, 0.34 of an inch of precipitation, mostly in the form of snow, was recorded, and on May 8 and 9, there was a precipitation of 0.43 of an inch, all in the form of snow. The last few days have been somewhat warmer, and both winter and spring grain in the Judith Basin look very well.

Although there were several spells of very cold weather the past winter, very little killing of winter wheat occurred in central Montana. The snow fall was above normal and there was very little soil blowing. Therefore the winter wheat had a good covering during most of the cold weather.

Temperatures in April were above normal, and winter wheat started making some growth about the loth of April.

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, L. L. Davis) (May 21)

Weather conditions so far in May have been very favorable for crop growth. Three rains totaling 1.7 inches have made irrigation unnecessary. Good stands were obtained in the nursery and plot tests. Early barley varieties will begin heading in about two weeks.

Dr. H. V. Harlan will arrive at the Aberdeen Substation on June 1 to conduct barley studies during the summer. This year Dr. Harlan is growing the barley viability nursery at Aberdeen which consists of 1200 sorts.

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)
(May 7)

The spring promises to be somewhat earlier than usual, but cool weather and frequent rains in late March and April have made conditions unusually favorable for spring grain. On May 2 and 3 there were recorded 1.3 inches of rain which assures sufficient moisture for a normal crop of both winter and spring grain in 1930.

The long subzero weather in January did not materially injure winter wheat on the Station grounds. There is a perfect stand of the hardier winter varieties and a fair survival even of spring varieties sown late in October in the dust. The fall sowings did not emerge until early spring. The physiologic forms experiments with bunt were seeded on April 7. The new collections and hybrid material were seeded on April 8 and 9. A large number of F3 families of Hope X Jenkin are being tested on bunt forms 3 and 6 individually and also on a mixture of forms 1, 2, 4, 6, and 7. These were sown April 6. Eleven collections of covered smut of oats were used as inoculum for 7 different varieties of oats. A mixture of these forms was used as inoculum for 53 varieties. The smutted oats were sown April 9. The nursery has been cultivated twice to destroy weeds and is in excellent condition at present.

Agricultural Experiment Station, Fullman (Stinking Smuts of Wheat, H. H. Flot)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

Agricultural Experiment Station, Corvallis (Foot Rots of Wheat, Roderick Sprague)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones) (May 15)

The preparation of the Station land for seeding was begun on April 3. Showers in April aided in preparing good seed beds. Seeding was begun on April 22 and finished on April 30. We began to submerge the plots on April 24. The nursery and varietal plots were irrigated and drained from April 26 to April 25.

Temperatures in the last week in April and the first half of May have been below normal and there has been a good deal of cloudy weather, which has retarded germination and the growth of rice. Therefore it is too early to make any estimates regarding the stands of rice.

Probably 90 per cent of the rice acreage in the State has been sown and irrigated. It looks as if about 115,000 acres will be sown to rice this year.

The rice market is rather quiet, but the Rice Growers! Association is selling some rice each week.

University Farm, Davis (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)



CEREAL COURIER

Official Messenger of the Office of Cercal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22

May 31, 1930 Personnel (May 21-31) and General Issue No. 12

PERSONNEL ITEMS

Mr. A. C. Dillman, associate agronomist in charge of flax investigations, returned to Washington on May 26 from a short trip to San Antonio, Tex., and Parsons, Kans. At San Antonio notes were taken on the flax classification nursery. Flax sown at San Antonio in November and December, 1929, was destroyed by severe freezing weather the first week in January, when a minimum temperature of 9 degrees F. was recorded. Varietal plots were reseeded the middle of January. They looked very promising on May 20, on which date the varieties were nearly ripe.

Mr. Dillman looked over the several experimental seedings conducted by the Kansas Agricultural Experiment Station in the southeastern part of Kansas near Fredonia, Moran, and Columbus. The germination of flax in the experimental seedings and in farmers' fields was somewhat irregular as the result of dry weather in April, and the stands were uneven. The flax acreage had been considerably increased, and at the time of Mr. Dillman's visit the crop in general looked very promising. Fields seeded in April were in bloom.

No flax diseases of any significance were noted either in the experimental plots at San Antonio or in southeastern Kansas.

- Mr. Christian H. Ficke, of Manhattan, Kans., was appointed agent, effective May 26, to assist Dr. Hurley Fellows, associate pathologist, of this Office, in the investigations of foot-rot of wheat conducted at Manhattan, Kans., in cooperation with the Kansas Agricultural Experiment Station.
- Mr. H. S. Garrison, assistant agronomist in corn investigations, returned to Washington on May 25 from Tifton, Ga.
- Mr. R. W. Leukel, associate pathologist, will leave Washington on June 2 for points in North Carolina, Georgia, Tennessee, Kentucky, Ohio, and West Virginia to take data on seed-treatment plots and collect information on cereal diseases. Mr. Leukel will be in the field about three weeks.
- Dr. E. C. Stakman, agent in the cereal-disease invostigations conducted in cooperation with the Minnesota Agricultural Experiment Station at University Farm, St. Paul, Minn., was in Washington on May 21. He left the next day for New York to sail for Liberia, where he will assist in organizing a research program for the Firestone Rubber Co. Dr. Stakman will return to the United States the latter part of August.

VISITORS

- Dr. W. H. Tisdale, of the E. I. Du Pont de Nemours and Co., Inc., Wilmington, Del., was an Office visitor on May 21 and 22.
- Dr. T. K. Wolfe, editor of the Southern Planter, was an Office visitor on May 23. Dr. Wolfe was interested in getting the latest information on the distribution of cereal varieties.

The Annual Cereal Day was held at University Farm, Davis, Calif., on Friday, May 23.

MANUSCRIPTS AND PUBLICATIONS

- 28 A manuscript entitled "Infection Phenomena and Host Reactions Caused by <u>Tilletia tritici</u> in Susceptible and Nonsusceptible Varieties of Wheat," by <u>H. M. Woolman</u>, was approved on May 23 for submittal to Phytopathology.
- 29 An article entitled "An Aberrant Physiologic Form of <u>Puccinia</u> triticina Eriks.," by <u>C. O. Johnston</u>, was approved on May 28 for submittal to Phytopathology.
- 30 An article entitled "Use of Expressed Sap in Physiologic Studies of Corn," by J. D. Sayre and V. H. Morris, was approved on May 28 for submittal to Plant Physiology.

Galley proof of article entitled "Inheritance of Anthocyanin Pigmentation in Rice," by <u>Jenkin W. Jones</u>, for publication in the Journal of Agricultural Research, was read on May 8.

Farmers'Bulletim 1621 entitled "Varieties of Hard Red Spring Wheat," by J. Allen Clark, has been received from the Government Printing Office, bearing date of May, 1930.

RECENT DECISIONS OF THE COMPTROLLER GENERAL

(A-30415)

9 Comp. Gen. 331.

TRAVELING EXPENSES, DIVISION OF GASOLINE AND OIL

An employee of the Government, while traveling in an automobile on official business, accompanied by other employees not in a duty status may be reimbursed only his pro rata share of the cost of gasoline and oil consumed.

(A-30577)

9 Comp. Gen. 378

CONTRACTS-ADDITIONAL PAYMENTS

The act of April 10, 1928, 45 Stat. 413, does not authorize or justify any report or recommendation that a contractor be paid any sum in excess of the contract price for the performance of Government work simply because by the performance of the contract entered into after competition, the contractor incurred a loss rather than a profit.

(A-30795)

9 Comp. Gen. 412

PRINTING AND BINDING -- FILLERS FOR RING BINDERS

Fillers for ring binders, consisting of ruled and punched sheets without other printing, which are not listed as paper available from the Government Printing Office but are carried in stock by dealers for sale to the public generally and require no printing operation after receipt of requisition, may be procured by contract from the lowest bidder, they not coming within the purview of the acts of June 23, 1902, 32 Stat. 431, March 1, 1919, 40 Stat. 1270, or the act of June 7, 1924, 43 Stat. 592.

(A-30971)

9 Comp. Gen. 415

PUBLIC PROPERTY -- LOAN OF -- DEPRECIATION

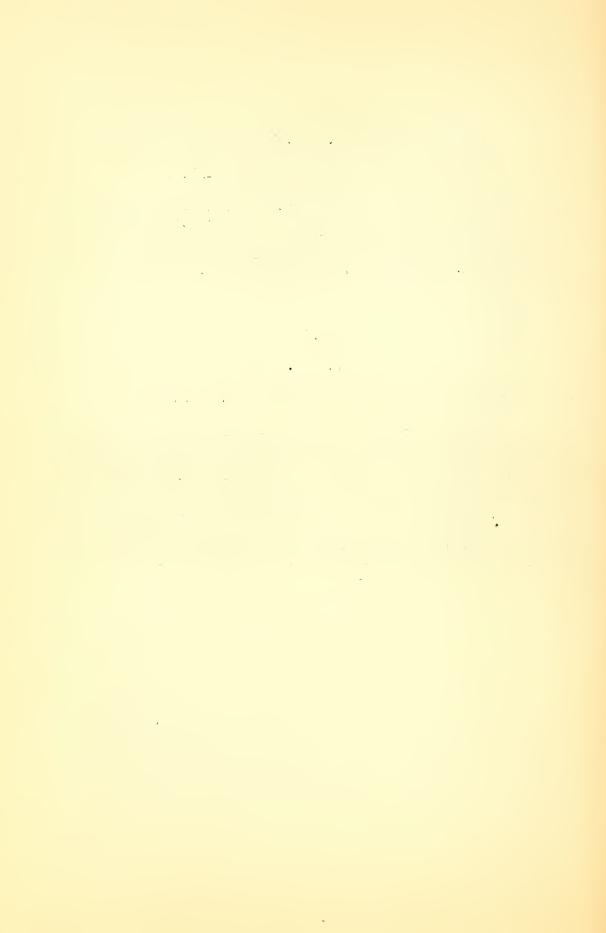
Where equipment of one governmental agency is borrowed and used by another governmental agency there is no authority of law to demand a return or compensation based upon the use alone, hence reimbursement for use and depreciation of such property is not authorized. 3 Comp. Gen. 74 distinguished.

(A-31080)

9 Comp. Gen. 421

PURCHASE OF LAND BY THE GOVERNMENT-RENT-INTEREST

Where a delay occurs in the consummation of an executory contract for the purchase of land by the Government, caused by failure of the vendor in the first instance to furnish a satisfactory title, there is no authority, under the appropriation act providing only for the purchase of land, for the payment of rent or interest from the date informally set by the parties to the agreement as a reasonable time in which to consummate the terms of the contract, to the date the deed was actually approved by the Attorney General, as provided by section 355 of the Revised Statutes.





CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22 June 10, 1930 No. 13
Personnel (June 1-10) and Field Station (May 16-31) Issue

PERSONNEL ITEMS

- Mr. C. H. Kyle, senior agronomist in corn investigations, will leave Washington about June 15 for Tifton, Ga., where he will handpollinate corn and take notes on cooperative corn experiment plots. Mr. Kyle will be in the field until late in August.
- Dr. E. B. Mains, agent in the cereal-disease investigations in cooperation with the Purdue University Agricultural Experiment Station at La Fayette, Ind., came to Washington on June 6 to confer with members of the Office staff and to take notes on leaf rust of cereals at the Arlington Experiment Farm, near Washington.

MANUSCRIPTS AND PUBLICATIONS

Page proof of Circular 119 entitled "Relation of Dust Fungicides to Flow of Small Grains through Drills and to Drill Injury," by R. W. Leukel, was read on June 3.

32 A manuscript entitled "Height of Stubble and Straw Yields of Small Grains," by J. W. Taylor and J. H. Martin, was approved on June 10 for submittal to the Journal of the American Society of Agronomy.

FIELD STATION CONDITION AND PROGRESS

(All experiments except those conducted at the Arlington Experiment Farm, Rosslyn, Va., are in cooperation with State agricultural experiment stations or other agencies.)

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

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Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

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Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)
(June 4)

Field operations on the Station in May progressed nicely. All rice plots were submerged. Cotton plots were thinned, and soybean fields were cultivated. Stands are good in all plots and there are very few weeds.

The stands in most commercial rice fields are satisfactory, and the fields are generally rather free of weeds; however, towards the latter part of the month the plants in most fields became brownish and apparently scorched towards the top. This condition perhaps is due to the rather constant strong, cool winds.

The weather in May was rather dry, cool, and windy. The absolute maximum temperature was only 37 degrees F. The total precipitation was 4.56 inches

Visitors in May included Mr. M. A. McCall, Dr. A. G. Johnson, and Mr. E. C. Tullis of the Office of Cereal Crops and Diseases, Dr. Pickenbrock of Germany, and Hon. H. D. Wilson, Commissioner of Agriculture of the State of Louisiana.

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

ARKANSAS

Agricultural Experiment Station, Fayetteville (Rice Diseases, E. C. Tullis)

MISSOURI

Agricultural Experiment Station, Columbia (Rice Agronomy, B. M. King)

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

OHIO

Agricultural Experiment Station, Wooster (Corn Investigations, G. H. Stringfield)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, * T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of & , , H. C. Murphy)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, LaFayette (Corn Rots and Metallic Poisoning, J. F. Trost, Acting in Charge)

Purdue University Agricultural Experiment Station, LaFayette (Leaf Rusts, E. B. Mains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, R. G. Shands, Acting in Charge)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, E. R. Ausemus) (June 3)

Weather conditions in May were very favorable for the growth of cereals. The weather was cold and rainy during the first two weeks. This was followed by cool weather which has allowed the plants to stool and make a good growth. There was a prediction of frost at various times during the latter half of the month but no frost occurred at University Farm.

Sixteen forms of stem rust are being increased in the greenhouse for use in making an artificial epidemic in the field. These forms are the most prevelant in the Mississippi Valley and south into Oklahoma and Texas.

The primary infection of stem rust on plants in the Rust Nursery was noted June 1. These plants were hypodermically inoculated with stem-rust urediniospores about 10 days ago.

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

<u>Woodward Field Station, Woodward</u> (Grain Sorghum and Broomcorn, J. B. Sieglinger) (June 2)

The first seeding of sorghums and broomcorns in the varietal plots was made on May 26. The soil is rather cold.

Wheat on the Station farm is fully headed. Some of the varieties are coloring and beginning to ripen.

Visitors at the Station included Messrs. M. A. McCall and J. Allen Clark on May 24; Mr. C. O. Johnston on May 25; Dr. K. S. Quisenberry on May 29; and Dr. A. G. Johnson and Dr. Hurley Fellows on May 31.

Minimum temperature for the last half of May, 41° on May 19, maximum for the same period 91° on May 27. Precipitation for the last half of May, 0.10 of an inch, or a total of 7.78 inches for the month.

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson) (June 2)

The mean temperature for May at Manhattan was 64.40, or almost exactly the 71-year normal for this month. No frosts occurred. Rainfall totaled 5.23 inches on 13 days, as compared to a normal precipitation of 4.28 inches. Rain was recorded on 11 of the first 18 days of the month, which, together with the almost continuous rainfall during the closing week of April, seriously delayed corn planting. Corn planting in the southern part of the State was well along before this rainy spell, and the crop is reported to be up to fairly good stands and generally well cultivated. In the northern portions much of the corn is not up and considerable remains to be planted.

Wheat appears to be slightly earlier than usual and is filling under ideal conditions. The weather of the past 10 days has been excellent for haying, and most of the first cutting alfalfa in this locality is cured.

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston) (June 6)

The writer has just returned from an extensive trip through northern Texas, central and western Oklahoma, the Texas Panhandle and southern Kansas. Much of the travel was by automobile, affording an opportunity to inspect many fields of wheat. Dr. A. G. Johnson and Dr. Hurley Fellows were the other members of the party. The wheat crop in general seemed to be very spotted. Many excellent fields were seen in central and southern Kansas, northern Oklahoma, and north central Texas. Most of the crop in

central Oklahoma was thin on the ground and lacking in vigor. In the Texas Panhandle and in western Oklahoma the crop in general was very short and thin. Wheat in this area was severely injured by spring drought. A few good fields were seen, however, especially on fallowed land.

Leaf-rust collections were made at many points along the route of travel. In general there seems to be much less leaf rust in the southern Great Plains this year than last year. A light infection obtained as far north as central Kansas on June 1, but wheat is well advanced and it is doubtful if the rust will reach serious proportions before maturity. Practically no leaf rust was found at Amarillo, Tex., and Woodward, Okla. Moderate infections were found at Denton, Tex., and in central Oklahoma. Rather heavy infections were encountered at Stillwater, Okla., and at Harper in southern Kansas. Leaf rust is just beginning to reach epiphytotic proportions here at Manhattan.

Small spots of stem-rust infection were found in nearly every field entered in Texas and Oklahoma. No widespread infections were encountered, but an occasional heavily infected plant was found in most fields. A few uredinia of stem rust were found at Manhattan on June 4.

Septoria leaf blotch is prevalent in the southern Great Plains again this year, and certain varieties of wheat have been seriously defoliated by it. Scab is beginning to show up in small amounts, but it seems unlikely that the heavy infections observed in 1929 will be repeated.

The weather remains unseasonably cool and moist and the ripening of wheat is being retarded. A recent storm caused severe lodging in the leaf-rust and agronomy nurseries here at Manhattan.

Fort Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson)

NEBRASKA

Morth Platte Substation, North Platte (Cereal Agronomy, N. E. Jodon)

Corn planting was completed on the dry-land plots on May 20, but low temperature has delayed emergence; no plants had emerged on May 31. The plantings made May 14 on irrigated land emerged May 28. A good stand was obtained.

Early Blackhull wheat headed May 21, and several other varieties of winter wheat, including Kanred, headed just before the end of the month.

A snow storm occurred on May 17. Snow fell from 5:00 a.m. until 10 p.m. About four inches of snow remained the next morning, and this was not completely melted until evening. The temperature remained at 32 degrees for 24 hours. Oats showed effects of the low temperature.

Precipitation amounting to 1.30 inches was recorded on May 23.

SOUTH DAKOTA

U. S. Cereal Field Experiments, Redfield (Wheat Improvement, E. S. McFadden)

NORTH DAKOTA

Northern Great Plains Field Station, Mandan (Cereal Agronomy, V. C. Hubbard) (June 2)

Dry, cool weather prevailed during the last half of May. Rain would be of much value to crops though they are not suffering from drought as yet.

Wheat, oats, and barley in plots and in the nursery are growing vigorously. Wheat stands in the nursery and plots are satisfactory. The stand of oats and barley in plots is rather thin. Germination tests made on the 1929 oats varieties showed low germination percentages, as low as fifty per cent for some varieties. The dry weather in June, July, and August of last year probably was responsible for some of the poor seed viability.

Eight barley varieties were reseded on May 20 because of poor stands. Wire worms were numerous in the barley plots and undoubtedly caused some damage.

Wheat and oats stands on surrounding farms are good. Fields are uniform in appearance.

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.)(June 2)

The flax varietal plots were seeded May 17 and emerged May 25 with good stands. The 5-foot and 5-foot hand-seeded nursery rows were sown May 17. The planter-seeded rows, including the classification nursery, and the remaining 5-foot rows on flax-sick soil were sown May 19 and 20. Germination in all nursery rows has been poor because of the shallower seeding compared with plots seeded with the grain drill. The surface soil is very dry though there is plenty of moisture three inches below the surface to insure prompt germination of seed sown at that depth. Complete germination in nursery rows will not be obtained until after we have a good rain.

Flax sown May 10 in the date-and-rate-of-seeding-and-tillage experiment emerged May 23. The stand was not entirely satisfactory because of the crust on the surface formed by the heavy rainfall of 1.29 inches during the four days following seeding. Plots sown May 20 emerged May 28 with good stands. The fifth seeding was made May 31.

The last half of May was characterized by lack of precipitation, low temperature and high winds. No precipitation was recorded in this period. Maximum temperature was 87° on May 20 and minimum, 26° on May 16. The last frost occurred on May 17 when a temperature of 32° was recorded. Brilliant displays of northern lights were noted on May 16 and 30.

(June 2) Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith)

Flax varieties are emerging and should be much benefited by the rain. With the exception of corn, which is slow in emerging, cereal crops are generally in very good condition. The winter-wheat nursery has perhaps the best stand that has ever survived the winter here. Winter wheat in plots is thinner in stand. Winter rye is heading and the spring small grains are making a normal growth with good stands.

The month of May was unusually cold, and temperatures below freezing were recorded several mornings but apparently without injury to cereal crops. Corn has been slow in germinating and had not yet emerged when the last frost occurred on May 17.

The latter half of the month was dry and high winds the past week did some damage by drifting the soil on some fields in the vicinity. The early germination and vigorous growth of grain prevented injury on some farms subject to injury from this cause.

The total precipitation for May was 1.23 inches or more than an inch below normal. A windstorm on June 1 was accompanied by a rain of 0.45 inch.

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle) (June 4)

Continued wet weather throughout the first half of May prevented nursery seedings of flax being started before May 17, at which time the soil close to the surface was not friable. Dry, warm, and windy weather during the latter part of May has caused a somewhat irregular emergence of flax plants. The sudden change to drought after seeding has left the soil so firmly crusted about the plants in an unfriable condition that heat canker is prevalent in certain seedings.

Seed sown in April was injured in some cases by damping-off during the early part of May, and by frosts which occurred from May 19 to 26.

Langdon Substation, Langdon (Wheat Improvement, G. S. Smith) (May 29)

A severe wind and dust storm on May 22 caused considerable damage to the wheat nursery. Fortunately not all of the plants had emerged. Such as were injured are making satisfactory recovery but will be set back several days in their growth.

The last seedings of spaced hybrid material are just emerging. Conditions now are very favorable to growth of small grains. Although winds have dried off the surface plenty of moisture remains in the soil below.

On the whole the month of May has been cold, wet, windy, and unsettled and vegetative growth has been retarded. There have been recorded 4.34 inches of precipitation, over four inches of which fell in the first two weeks of the month. There have been several light frosts and on May 17, a temperature of 23 degrees was recorded. On May 22, the day of the high wind, the maximum temperature for the month, 39 degrees, was recorded and on the same day the mercury fell to 35 degrees.

MONTANA

Judith Basin Branch Station, Moccasin (Cereal Agronomy, B. B. Bayles)

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, L. L. Davis)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

Agricultural Experiment Station, Pullman (Stinking Smuts of Wheat, H. H. Flor)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

Agricultural Experiment Station, Corvallis (Foot Rots of Wheat, Roderick Sprague)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)

University Farm, Davis (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)



CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22 June 20, 1930 No. 13

Personnel (June 11-20) and Field Station (June 1-15) Issue

PERSONNEL ITEMS

Mr. J. Allen Clark, senior agronomist in charge of western wheat investigations, will leave Washington about June 25 to visit field stations in Wisconsin, Minnesota, North Dakota, South Dakota, Montana, and Wyoming, where cooperative wheat experiments are being conducted. The Marshfield Substation, Marshfield, Wis., the University Farm, St. Paul, Minn., and the Southeast Experiment Station, Waseca, Minn., will be visited first to make a study of wheat varieties and hybrids in the cooperative breeding nurseries. Mr. Clark also will confer with Federal and State officials at the places mentioned.

Mr. F. A. Coffman, associate agronomist in oat investigations will leave Washington about June 26 to visit cooperating field experiment stations in Ohio, Indiana, Illinois, Iowa, and Nebraska to study oat varieties and hybrids.

Mr. A. C. Dillman, associate agronomist in charge of flax investigations, will visit the agricultural experiment station at New Brunswick, N. J., on June 25 to take notes on the flax varieties grown at that Station. On June 29 Mr. Dillman will leave Washington on a trip of several weeks to the flaxseed-producing States, where he will take notes on the cooperative flax experiments and on the flax classification nurseries located at St. Paul, Minn., Mandan, N. Dak., and Bozeman, Mont.

- Dr. H. B. Humphrey, principal pathologist in charge of cereal-rust investigations, will leave Washington about June 25 to visit points in Indiana, Iowa, Kansas, Minnesota, North Dakota, South Dakota, and Manitoba, Canada. He will make inspections of cooperative field and nursery experiments and consult with officials of agricultural experiment stations and others interested in cereal rust research.
- Dr. F. E. Kempton, formerly associate pathologist in charge of barberry eradication, was married on May 28 to Miss Ellen A. Fenner, of Washington, D. C. Dr. and Mrs. Kempton will make their home in Centerville, Ind.
- Dr. C. E. Leighty, principal agronomist in charge of eastern wheat investigations, returned to Washington on June 13 from a trip in the interests of wheat investigations.
- Mr. M. A. McCall, principal agronomist in charge, returned on June 16 from an extended trip in the interests of cereal crops and diseases.
- Dr. K. S. Quisenberry, associate agronomist in western wheat investigations, who left Washington on May 27, inspected the cooperative wheat plots and nursery at Woodward, Okla., which were started in the fall of 1929. At Woodward, Dr. Quisenberry took a Government-owned truck to continue his inspection trip in the various wheat-growing States. Between Woodward and Lawton wheat was rather spotted, -- some good and some poor. May 30 and 31 were spent at the Dry-Land Station at Lawton.

At Substation No. 6, Denton, Tex., on June 2 and 3 harvesting had started. The stand of wheat was a little thin owing to winter-killing. The uniform smut nursery failed to show any smut, therefore no counts were made.

Stops were made at Amarillo and Dalhart, Tex., and Goodwell, Okla., before making a short trip through southwestern Kansas. Throughout much of the latter area there is some excellent wheat and much that is very thin. Heavy hailstorms have caused some damage in local areas. The furrow drill is being used quite extensively for seeding wheat in this area.

At Woodward, Okla., on June 9 the earlier varieties of wheat were being cut. That night there was a very heavy rainfall throughout western Oklahoma, making travel by car rather slow, and stopping the harvest operations which had just begun.

At Stillwater, Okla., wheat is rather thin owing to winterkilling. On the College farm the land has been terraced-recently, and some of the terraces cut right through the varietal plots. This will cause plots of different sizes in this year's experiments. In the uniform smut nursery some smut had developed but the total number of heads was very small because of winterkilling.

In the vicinity of Enid, Okla., on June 13, binders were cutting both wheat and oats. Near Alva, Okla., wheat was still riper but was standing for combining. Little wheat has been cut between Alva and Newton, Kans. The heavy rains of the past week have delayed harvest in this section.

On June 16 Dr. Quisenberry visited the farm of Mr. Earl G. Clark near Nerton. Mr. Clark has an awnless soft wheat which he may offer for sale this fall. It is designated as Clark's No. 40. Leaf rust was very heavy on some of the strains in his experiments. There also was some stem rust.

- Mr. F. D. Richey, senior agronomist in charge of corn investigations, returned to Washington on June 16 from Wooster and Columbus, Ohio, where he conferred with cooperating officials regarding the progress of corn investigations.
- Mr. T. R. Stanton, senior agronomist in charge of oat investigations, who left Washington on May 31, writes that on June 2 he inspected the cooperative oat-breeding nursery at Manhattan, Kans. Kanota and other strains of Fulghum were in excellent condition on the station. Victoria, the new crown-rust-resistant variety, will be rather late in maturity in Kansas. Oats were reported as being in good condition rather generally throughout the State. Dean L. E. Call stated that he believed 1930 would be another "Kanota oat year."

At Stillwater, Okla., very poor stands were obtained from the nursery seedings of spring oats owing to unfavorable weather at and following seeding time. As a result, yield data from the strains being grown in the uniform yield-test nursery will not be very satisfactory. Many fields of Fulghum and Kanota oats in Oklahoma were badly infested with smut.

At Substation No. 6, Denton, Tex., all fall-sown oats had been completely destroyed by winterkilling. However, an excellent crop of oats was being harvested from February seeding. Nortex and Tex. No. 1118-69 were among the most promising in plots. Several of the Fulghum selections, Nos. 699-202, 699-2011, and 699-2015, etc., sent from the Arlington Experiment Farm a few years ago also were in excellent condition from spring seeding. If it is possible to develop rust-resistant strains of these winter-form Fulghums they should find a place in this section of Texas.

At Stuttgart, Ark., 15 varieties of oats were being grown in single 10th-acre plots from fall seeding. Lee, Custis, and strains of Culberson had survived the winter in much better condition than Fulghum and Red Rustproof.

Stops were made at Baton Rouge, La., and San Antonio, Tex., where practically all experimental seedings of oats had been harvested. In the section around San Antonio the Red Rustproof variety is mostly grown. Fulghum is too susceptible to crown rust for satisfactory culture in this section.

In the vicinity of Yuma, Ariz., several fields of oats were examined. The variety appeared to be Burt and a fair to good crop was being harvested. A car of certified Kanota oats obtained from Kansas last fall and sown in Los Angeles County, Calif., showed some infection of smut. The seed had been treated with ceresan. Ordinarily smut has not been much of a factor in oats in California. Whether the Fulghum smut strain survives and continues to infest Fulghum oats in California will prove of considerable interest.

At Davis oats were fully ripe and were being harvested. The crop is quite good this year, Kanota probably leading in yield. In an auto trip within a radius of about 50 miles around Davis many fields of excellent wheat and barley were noted. Combining was just getting well under way. Only a few fields of oats were seen.

The following members of the Office staff have been authorized to attend the meetings of the Corn Belt Section of the American Society of Agronomy at Lincoln, Nebr., on June 23 and 24:

- C. W. Bower, agent, Dr. A. M. Brunson, agronomist, Dr. Hurley Fellows, associate pathologist, C. O. Johnston, associate pathologist, and Dr. J. H. Parker, agronomist, of Manhattan, Kans.
- A. A. Bryan, associate agronomist, L. C. Burnett, agent, Dr. M. T. Jenkins, associate agronomist, R. W. Jugenheimer, agent, and H. C. Murphy, associate pathologist, of Ames, Iowa.
 - N. E. Jodon, junior agronomist, of North Platte, Nebr.
 - J. B. Sieglinger, agronomist, of Woodward, Okla.
 - Dr. L. J. Stadler, agent, of Columbia, Mo.
 - A. F. Swanson, associate agronomist, of Hays, Kans.
- Dr. K. S. Quisenberry, associate agronomist in western wheat investigations, of Washington, D. C.

MANUSCRIPTS AND PUBLICATIONS

Galley proof of article entitled "Apparatus and Method for Obtaining Sterile Filtrates of Biological Fluids," by Emery R. Ranker, for publication in Phytopathology, was read on June 12.

The article entitled "Bacterial Streak Disease of Sorghums," by Charlotte Elliott, appears in the Journal of Agricultural Research 40(11): 963-976, pls. 1-2, figs. 1-4. June 1, 1930.

The article entitled "Inheritance of Anthocyan Pigmentation in Rice," by Jenkin W. Jones, appears in the Journal of Agricultural Research 40(12): 1105-1125. June 15, 1930. (Cooperation between the Office of Cereal Crops and Diseases and the California Agricultural Experiment Station.)

FIELD STATION CONDITION AND PROGRESS

(All experiments except those conducted at the Arlington Experiment Farm, Rosslyn, Va., are in cooperation with State agricultural experiment stations or other agencies.)

HUMID ATLANTIC COAST AREA (South to North)

GEORGI A

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

ARKANSAS

Agricultural Experiment Station, Fayetteville (Rice Diseases, E. C. Tullis)

MISSOURI

Agricultural Experiment Station, Columbia (Rice Agronomy, B. M. King)

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

OHIO

Agricultural Experiment Station, Wooster (Corn Investigations, G. H. Stringfield)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, H. C. Murphy)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, LaFayette (Corn Rots and Metallic Poisoning, J. F. Trost, Acting in Charge)

Purdue University Agricultural Experiment Station, LaFayette (Leaf Rusts, E. B. Mains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, R. G. Shands, Acting in Charge)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, E. R. Ausemus)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman) (M. N. Levine)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (June 17)

Sorghum seeding has been and is being pushed, as the middle of June has proved to be the best date for seeding most sorghums.

The second-date seeding of the varietal plots of sorghums and broomcorn was done June 9, and the same night a dashing rain occurred which washed out considerable seed.

Harvesting of the varietal plots of wheat was completed June 16; some of the later varieties in the nursery remain to be harvested.

Mr. C. B. Cross of the Agronomy Department of the Oklahoma A. and M. College, and Dr. Karl S. Quisenberry of Washington, D. C., visited the Station on June 7 and 9, respectively, to look over the wheat project.

The maximum temperature for first half of June was 90° on the 14th; minimum, 55° on the 7th; precipitation, 2.61 inches, which occurred in two rains.

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston)

Fort Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson)

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, N. E. Jodon)

SOUTH DAKOTA

U. S. Cereal Field Experiments, Redfield (Wheat Improvement, E. S. McFadden) (June 12)

Weather conditions during the first part of April were very favorable for seeding of spring grains. The field plots of wheat, oats, and barley were seeded the first week in April, and the nursery seedings, consisting of about 3,700 rows, with the exception of some inheritance material, were completed the second week in April. Good stands were obtained in all of the experiments.

Heavy rains and a hailstorm the first two weeks of May packed the surface soil as smooth as a floor. As soon as the surface dried off after these rains, soil blowing started on the lighter soils. Considerable damage has been done to the crops on the station by soil blowing from the bare roads and fallow plots. In order to reduce the blowing, the fallow and roads were kept ridged by working with a duckfoot cultivator. This helped check the soil blowing temporarily. However, extremely high wind on May 31 and June 1 completely obliterated the ridges and ruined all of the field plots on the lighter soil on the ridge on the central part of the station. This included two series of oats, one of barley, and one of wheat. There remain one series of oats and two of wheat and barley that are damaged only slightly. These are located mostly on gumbo soil near the south end of the station.

One series of winter-wheat varieties on fallow was completely blown out during the first part of April before the spring rains started. The other two series, one on fallow and one on fall plowing, were severely injured at that time also but would have recovered had it not been for the severe winds that occurred later which swept several of the plots as bare as a floor.

About one half of the spring-wheat nursery has been dama/ged beyond recovery by the soil blowing. The 9-row material, some of the single rod-rows, and most of the inheritance material probably will recover if further blowing does not take place. The winter-wheat nursery on the lower ground at the north end of the station has been buried under a fresh blanket of soil three different times. At present, only the tips of the leaves can be seen sticking out of a sand dune a foot or more in depth.

A light rain occurred on the night of June 2. Following this rain, the roads and all of the bare ground on the station, with the exception of the regular fallow, were drilled in to Turghai proso. It is hoped that this crop will be able to make a sufficiently rapid growth to check further soil blowing this year and give a heavy stubble which will help to hold the soil in the roads down another spring. The roads were seeded down to alfalfa in 1929, but owing to the drought, a stand was not obtained. They were again seeded to alfalfa this spring, but the seed was either blown out of the ground or the young plants cut off by the drifting sand. It is planned to make another attempt to get the roads into alfalfa and brome grass next year by seeding in the proso stubble early in the spring without any soil preparation. If a stand of alfalfa and brome is once obtained in the roads, it should help materially to check the soil blowing. Spring plowing for corn and duckfooting the fallow without plowing also should help to check soil blowing in the future.

NORTH DAKOTA

Northern Great Plains Field Station, Mandan (Cereal Agronomy, V. C. Hubbard) (June 16)

Wheat, oats, and barley in the plots and in the nursery are making rapid growth. Stands of oats and barley in the plots are thin in spite of the fact that two of the oat varieties and eight of the barley varieties were resown.

Although crops were not suffering, the beneficial effects of 0.35 of an inch of rain on June 11 are easily noticeable.

A very strong southwest wind on June 1 caused some injury to several oat and barley varieties in the plots. Wheat varieties were not damaged. Slight injury was noted in small areas of farm wheat fields located on prominent knolls.

General crop appearances on the surrounding farms are good. Wheat in the fields is approximately eight inches high. Most of the fields have some wild mustard infestation. A few fields are very badly infested.

Messrs. Victor Sturlaugson and Glenn S. Smith, of the Langdon Substation, Langdon, N. Dak., were station visitors on June 2.

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (June 16)

The wind velocity on June 1 averaged 15 miles an hour for the 24 hours. Between noon and 6 p.m. the wind velocity averaged about 20 miles an hour. Severe wind damage occurred in the flax varietal plots located on one of the most exposed positions on the Station land. Series 1, all of which is situated above the edge of the slope and protected by trees on the north side, was practically undamaged. The most severe injury occurred in the last half of series 2 and the first half of series 3. The plants were injured not only by the cutting action of the wind-blown sand but by sand which had stuck to them as the result of a shower accompanying the wind and completely covered the leaf surfaces.

Insignificant showers occurred on June 1, 3, and 10 amounting to 0.03, 0.07, and 0.02 of an inch, respectively. The drought that had prevailed since May 14 was not really broken until June 11, when a precipitation of 0.55 of an inch was recorded. This should be sufficient to cause complete germination of flax in the nursery seedings.

The flax that failed to come up during this dry period is just beginning to emerge.

There are flower buds showing on flax seeded April 20, and first blooms should appear in the next two or three days.

The final seeding in the flax date-and-rate-of-seeding-and-tillage experiment was made June 10. The plants are just beginning to emerge today.

The weather of the first half of June was generally cool, windy, and dry. The maximum temperature for this period was 80° on June 8 and 11; minimum, 42° on June 4. The recorded precipitation was 0.97 of an inch.

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith)
(June 14)

Cool, windy weather has prevailed during most of the first two weeks of June. Several showers and a hailstorm have supplied 1.73 inches of precipitation. The hail did not cause any severe damage here, although losses are reported from adjoining districts:

Winter-rye varieties are fully headed and winter-wheat varieties are beginning to head. Spring cereals are in good condition with the exception of corn, which is uneven in stand and growing very slowly during this cool weather. The corn varieties have been replanted and cultivated. The nursery has been hoed and cultivated and plots have been trimmed and plot stakes set.

The Substation was visited on June 10 by Mr. E. C. Chilcott and Mr. J. M. Stephens.

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Langdon Substation, Langdon (Wheat Improvement, G. S. Smith) (June 14)

A good rain of well over an inch on June 12 came at a critical time for the small grains of this region and put them in good condition again. This was the first significant precipitation since the middle of May. A few more dry days would have caused serious injury to the crop.

Amother severe wind and dust storm on June 1 necessitated the reseeding of the flax varieties. Other crops were not so badly damaged.

The wheat nursery and wheat varieties are up six to ten inches and now are making rapid growth. The oat nursery also was injured by wind and sand storms, but the new growth is coming along in good shape. Corn stands only a few inches high. The long period of cool weather has not been favorable for growth.

MONTANA

Judith Basin Branch Station, Moccasin (Cereal Agronomy, B. B. Bayles)
[June 15]

The weather of the first half of June has been very dry and windy. The only precipitation recorded is 0.4 of an inch on the 2nd and 3rd.

Winter wheat is seriously affected by the drought and is starting to head. Unless it rains within the next few days yields probably will be very low.

Spring grain has not been seriously affected as yet but is nearing the critical point.

Hay crops and the range are in bad condition, and many stockmen in the foothills are wondering where they can secure enough range to carry their stock until fall.

There have been some local rains in Montana so far in June and crops in southeastern and northwestern Montana are reported to be in good condition.

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAH0

Aberdeen Substation, Aberdeen (Cereal Agronomy, L. L. Davis)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines)

Agricultural Experiment Station, Pullman (Stinking Smuts of Wheat, H. H. Flor)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

Agricultural Experiment Station, Corvallis (Foot Rots of Wheat, Roderick Sprague)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)
(June 16)

Rice on the Station looks fairly well but the stands this year are not so good as usual. The cool weather during the period of germination appears to have resulted in a poerer germination than is normally obtained by continuous submergence and by alternate flooding and draining. The rice appears to be stooling well and probably the stands will thicken up enough to give normal yields.

The Rice Growers Association of California estimates that 110,000 acres of rice were sown in California this year, as compared with 96,000 in 1929.

The weather of the first half of June was very favorable for the growth of rice. Temperatures have been high and the days clear.

Dr. H. V. Harlan and Mr. J. W. Taylor were Station visitors on May 27; Mr. J. A. Clark on May 30; and Dr. F. N. Briggs and Mr. G. A. Wiebe on June 5.

University Farm, Davis (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Berkeley (Cereal Smuts, F. N. Briggs)

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CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22

June 30, 1930 Personnel (June 21-30) and General Issue

No. 15

PERSONNEL ITEMS

- Dr. Charlotte Elliott, associate pathologist, will leave Washington about July 8 for Garden City and Manhattan, Kans., to conduct field experiments with bacterial diseases of sorghums in cooperation with the Kansas Agricultural Experiment Station. Dr. Elliott will return to Washington about the end of July.
- Mr. C. H. Kyle, senior agronomist in corn investigations, will leave Washington about July 1 for points in Georgia, South Carolina, Florida, Louisiana, and Tennessee to hand-pollinate, take notes on, and harvest, select, dry, fumigate, pack, and ship corn grown in cooperative experiments. Mr. Kyle will be in the field until the latter part of August.
- Mr. R. W. Leukel, associate pathologist, will leave about July 1 to spend two months in the study of cooperative smut nurseries in Wisconsin, Minnesota, South Dakota, North Dakota, Montana, Idaho, Washington, Oregon, Utah, Colorado, New Mexico, Kansas, and Oklahoma. Mr. Leukel also will confer with officials of agricultural experiment stations regarding cereal disease problems.
- Mr. H. McKinney, senior pathologist in charge of cereal-virus-disease investigations, will leave Washington on July 5 for Baton Rouge, La., to take field notes on corn mosaic experiments conducted in cooperation with the Louisiana Agricultural Experiment Station. Mr. McKinney will return to Washington about July 19.

MANUSCRIPTS AND PUBLICATIONS

- 33 A manuscript entitled "Freezing-Point Depression and Specific Conductivity of Sorghum Tissue," by John H. Martin, J. Arthur Harris, and Ivan D. Jones, was submitted on June 24 to the Journal of Agricultural Research.
- 34 A manuscript entitled "Oats in the Northeastern States," by T. R. Stanton and F. A. Coffman, was submitted on June 15 for publication in the Farmers' Bulletin series.
- 35 A short paper embodying changes to be incorporated in the article entitled "Corn," by <u>H. S. Garrison</u>, in the second edition of The Book of Rural Life (pp. 1325-27) was approved on June 25 for submittal to the editors of The Book of Rural Life.
- 36 A manuscript entitled "Results of Seed Treatment Experiments for Dent Corn," by <u>James R. Holbert</u> and <u>Benjamin Koehler</u>, was submitted on June 26 for publication in the Technical Bulletin series.
- 37 A manuscript entitled "The Outlook for Hybrid Corn in Indiana," by John F. Trost, was approved on June 28 for submittal to the Report of the Indiana Corn Growers' Association.

Galley proof of article entitled "Titration Curves of Etiolated and of Green Wheat Seedlings Reproduced with Buffer Mixtures," by Annie M. Hurd-Karrer, was read on June 24.

(A-31014) 9 Comp. Gen. 430 SUBSISTENCE--MEALS TAKEN AFTER ARRIVAL AT POST OF DUTY

An employee whose official duty station is New York City who, in returning from a trip on official business, arrived at the Grand Central Terminal at 6:35 p.m., is not entitled to reimbursement for the cost of a meal taken after arrival, under the Standardized Government Travel Regulations.

Decision by Comptroller General McCarl, April 3, 1930:

Review has been requested of settlement dated February 25, 1930, wherein credit was disallowed in the account of J. L. Summers, disbursing clerk, Treasury Department, for an item of \$1.70 paid L. M. Fisher, sanitary engineer, Public Health Service, on voucher No. 91243, as reimbursement for a meal obtained at the Grand Central Terminal upon arrival at his official station, New York City, on September 23, 1929.

The facts appear to be as follows:

On the morning of September 23, 1929 (9:30 a.m.), Sanitary Engineer Fisher, under competent orders, proceeded from New York City to Beacon, N. Y., and returned over the New York Central Railroad, arriving in New York City at 6:35 p.m. on the same date. The meal referred to, for which reimbursement was made and credit disallowed, was taken after arrival of the engineer at his official station. Disallowance was based upon paragraph 46 of the Standardized Government Travel Regulations, which provides that "under no circumstances will subsistence expenses or per diem in lieu thereof be allowed an amployee at his official station."

In the request for review, reference is made to a decision, 7 Comp. Gen. 548, in which authorization was given to reimburse a claimant for an item of expense incurred for breakfast at Algiers, La., on October 6, 1927, in connection with inspection work out of New Orleans, the claimant's official headquarters.

The question of reimbursement for subsistence -- meals en route before S a.m. or after 6 p.m. -- must be decided upon the basis of the facts presented in each case. In the decision referred to, the man left his official station (took the train) before 8 a.m., which entitled him to take breakfast en route at Government expense, and the meal was taken at the railroad station after he had been traveling from his home or office for about an hour by street car and ferry en route to the particular station from which he took a train for the place to which he was ordered, which station was not the principal railroad station at the place of his headquarters. The expense for the breakfast was allowed the same as the expense for street-car and ferry fares incurred after leaving his office on route to the place ordered on official business. Under such circumstances the expense for the meal was regarded as not incurred at his official station within the meaning of paragraph 46 of the travel regulations. The facts in that case clearly distinguish it from the instant case.

As to A-7321, dated February 24, 1925, also referred to in the request for review, where reimbursement was authorized to an employee for a meal obtained upon his arrival at his official station at \$.20p.m., it is noted that when this expense was incurred the Standardized Government Travel Regulations had not been promulgated.

As the evening meal here in question was taken "at his official station" instead of "en route to" his official station, paragraph 62 of the regulations is not applicable, and the provisions of paragraph 46 of the regulations are controlling. See 9 Comp. Gen. 167. Accordingly, the disallowance of credit must be and is sustained.

B.P.I.

(A-31163) 9 Comp. Gen. 449 COMPENSATION-DISMISSAL

The falsification of expense accounts by a postal employee constitutes such a violation of the oath of office and breach of contract of employment as to cause the forfeiture of compensation due for periods prior to date of suspension and dismissal.

Comptroller General McCarl to the Postmaster General, April 10, 1930:

I have your letter of March 25, 1930, requesting to be advised whether the unpaid salary due Carl W. Carlson, former substitute railway postal clerk, should be paid to him or forfeited to the Government.

The former employee was suspended for intoxication on duty, and while the charge was under investigation it developed that he had falsified his expense accounts and the amount of overpayments made on the falsified accounts was collected from him.

It has been held that repeated intoxication on duty, though sufficient cause for dismissal of postal employees, does not constitute such a violation of the oath of office or breach of the contract of employment as to cause the forfeiture of compensation due for periods prior to dismissal. See 8 Comp. Gen. 443.

The remaining question is what effect has the falsification of expense accounts. It constitutes a stealing of the public moneys and a fraud upon the United States, and more or less in disruption of the Government rather than in its support as required by oath of office. The recovery back of the payments unlawfully obtained may be for consideration in mitigation of punishment for the criminal offense, but can give no civil rights to a payment by the United States. The fraudulent action of this employee precludes the administrative certification of a pay roll or pay voucher with the meaning that the services were fully and faithfully performed. An employee can not be considered as performing the duties of his employment if at the time he is also working out and practicing a fraud on the Government. In the present matter there can not be viewed as any salary earned and accruing to the employee and no payment on such an account is authorized under the facts reported.

B.P.I.

CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22 July 10, 1930 No. 16
Personnel (July 1-10) and Field Station (June 16-30) Issue

PERSONNEL ITEMS

- Dr. F. N. Briggs, formerly associate pathologist in the cooperative cereal-smut investigations conducted at Berkeley, Calif., resigned his position on June 30 to accept one with the University of California.
- Mr. J. Allen Clark, senior agronomist in charge of western wheat investigations, who left Washington on June 25 to visit field stations in Wisconsin, Minnesota, and North Dakota in the interests of cooperative wheat investigations, left Fargo, N. Dak., on July 5 in a Government-owned auto to visit other points in North Dakota and Minnesota, and in South Dakota, Montana, and Wyoming. Mr. Clark will return to Washington about the first week in September.
- Mr. F. A. Coffman, associate agronomist in oat investigations, who left Washington on June 26 to study cat varieties and hybrids at cooperating field stations in the west, wrote from Urbana, Ill., on July 3 that oats in Ohio, Indiana, and Illinois are short because of a dry spring season. Corn looks fine and is very free from weeds, as farmers have been able to work at most any time. Wheat harvest is in full swing along the line of travel.

Mr. Coffman's itinorary will take him into Iowa, Nebraska, Colorado, Wyoming, Minnesota, Wisconsin, North Dakota, South Dakota, Montana, Idaho, Utah, Kansas, and Missouri. He will confer with officials and employees of the Department and of State agricultural experiment stations regarding cooperative experiments. He will make hybrids between cat types and varieties and collect oat plant material for laboratory study.

- Mr. A. C. Dillman, associate agronomist in charge of flax investigations, who left Washington on June 29 on a trip through the flaxseed-producing States will be at Mandan, N. Dak., on July 13 to take notes on the cooperative flax classification nursery at the Northern Great Plains Field Station. On completion of this work Mr. Dillman will proceed to points in Canada, Montana, Nebraska, Colorado, Wyoming, Kansas, and Ohio in the interests of flaxseed investigations.
- Mr. V. H. Florell, associate agronomist, will leave Washington on June 11 for a three weeks' trip in New York, Connecticut, Massachusetts, and Pennsylvania to look over field experiments and confer with research workers at State agricultural experiment stations and other institutions.
- Dr. E. F. Gaines, cerealist at the Washington State College of Agriculture, and agent in the cooperative experiments in the breeding of wheats for resistance to stinking smut, has been granted leave of absence from July 1 to December 31 for travel in Europe. Mr. William K. Smith will be in charge of the breeding experiments at Pullman, Wash., during the absence of Dr. Gaines.
- Dr. H. B. Humphrey, principal pathologist in charge of cereal-rust investigations, who left Washington on June 25 to make inspections of cooperative field and nursery experiments, expected to be at Brookings, S. Dak., on July 10 and at Aberdeen, S. Dak., on July 11. He will be at Fargo, N. Dak., from July 12 to 14.
- Mr. J. Milford Raeder, formerly agent in the stripe-rust investigations conducted in cooperation with the Idaho Agricultural Experiment Station at Moscow, who resigned his position on September 15, 1929, to engage in graduate study at the University of California, has completed his residence requirements for the doctorate degree and has resumed his duties as associate pathologist at the Idaho Agricultural Experiment Station. He has been reappointed by this Office as agent in the cooperative investigations of stripe rust of cereals and grasses.

VISITORS

<u>Dr. W. L. Burlison</u>, head of the department of agronomy, University of Illinois, was an Office visitor on July 5. Dr. Burlison and his family are spending several weeks in Washington and vicinity.

MANUSCRIPTS AND PUBLICATIONS

- 38 A manuscript entitled "Host Specialization of Barley Leaf Rust," by E. B. Mains, was approved on July 3 for transmittal to Phytopathology.
- 39 A manuscript entitled "A Successful Transfer of Emmer Characters to Vulgare Wheats," by E. S. McFadden, was approved on July 3 for transmittal to the Journal of the American Society of Agronomy.
- 40 A manuscript entitled "Inheritance of Resistance to Bunt, Tilletia tritici, in Hybrids of White Federation and Banner Berkeley Wheats," by Fred N. Briggs, was submitted on July S for publication in the Journal of Agricultural Research.

Galley proof of Farmers' Bulletin 1631 entitled "Broomcorn Growing and Handling," by John H. Martin and R. S. Washburn, was read on July 9.

The article entitled "Some Growth Curves of Parley Kernels," by Mary L. Martini, H. V. Harlan, and Merritt N. Pope, appears in Plant Physiology 2: 263-272, figs. 1-8. 1930. (Received July 9, 1930.)

FIELD STATION CONDITION AND PROGRESS

(All experiments except those conducted at the Arlington Experiment Farm; Rosslyn, Va., are in cooperation with State agricultural experiment stations or other agencies.)

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)
(June 9)

The yields of small grain have been very satisfactory this year. Leaf rust did some damage to varieties of oats and wheat, but the yields of most of them were very good. The highest field of oats was from the One-Hundred Bushel variety, which produced an average of 62.7 bushels to the acre. This variety was followed closely by Bancroft, Patterson, Texas Rustproof, and Appler. All yielded better than Fulghum. Coker's Norton, which has been rather promising in the northern part of the State on account of its cold resistence, was very badly damaged by rust and yielded 19.8 bushels to the acre.

The French variety of rye with which experiments have been conducted for several years produced 35.8 bushels to the acre, which is the best yield of rye.

Wheat yields were somewhat higher than usual. Coker's Red Heart, the highest yielding variety, produced an average of 21 bushels to the acre.

Barley yields were not so satisfactory. The variety Greece produced the highest yield, 20.8 bushels to the acre. Tennessee Hooded 6 yielded only 5.4 bushels.

On the whole, all yields were somewhat higher than usual. Oats in the general crop on the Coastal Plain Experiment Station produced a yield of about 45bushels to the acre. A number of farmers in Georgia are interested in the production of wheat, and it is said that there are about 22 combines in the State.

Mr. Ward, of the College Extension staff, visited a farm at Fort Valley Ga., having 500 acres in wheat, which it was estimated would yield at least 30 bushels to the acre.

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

TENNES SEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

ARKANSAS

Agricultural Experiment Station, Fayetteville (Rice Diseases, E. C. Tullis)

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MISSOURI

Agricultural Experiment Station, Columbia (Rice Agronomy, B. M. Ming)

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

OHIO

Agricultural Experiment Station, Wooster (Corn Investigations, G. H. Stringfield)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, H. C. Murphy)

ILLINOIS

Funk Bros. Seed Co., Blcomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, LaFayette (Corm Rots and Metallic Poisoning, J. F. Trost, Acting in Charge)

Purdue University Agricultural Experiment Station, LaFayette (Leaf Rusts, E. B. Mains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, R. G. Shands, Acting in Charge)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, E. R. Ausemus) (July 3)

The weather during the month of June has been almost ideal for growth of cereal crops. Temperatures have been cool and there has been plenty of moisture. This has resulted in excessive tillering of the plants, a heavy vegetative growth, and consequently some lodging on the more fertile land.

Winter wheats were fully headed by June 15. The spring wheat, oats, and barley varieties are now headed.

The writer, accompanied by Messrs. J. A. Clark and A. C. Dillman, of Washington, D. C. and Mr. R. H. Bamberg, of the University Farm, visited the Waseca Branch Station on July 2. Crops are in fine condition. A number of fields of wheat along the way were examined for stem rust. Rust was quite prevalent in all fields of spring wheat inspected. The levelopment of the grain was in the milk stage. Stem rust also was beginning to break out on the more susceptible varieties in the plots and nursery at the Waseca Station.

Recent visitors at the University Farm were Messrs. J. A. Clark and A. C. Dillman, and Dr. H. B. Humphrey, of Washington, D. C.

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman) (M. N. Levine)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (July 5)

Sorghum seeding is completed and fair to good stands have emerged. Thinning of the plots is progressing nicely.

The weather of the last half of June averaged hot and dry. Wheat harvest in the vicinity of Woodward appears to be completed. Threshing of some headed crops remains to be done.

The maximum temperature for the last half of June was 104 degrees on the 25th; minimum, \$9 degrees on the 16th. The precipitation was 0.32 of an inch which occurred on four dates. The total rainfall for June was 2.93 inches.

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston) (June 21)

The writer has visited many parts of the southern Great Plains area since May I and has been able to make valuable observations on the distribution and severity of the rusts of wheat and on the condition of the crop. Earlier trips already have been reported, so that these remarks will be confined to rather recent observations made in Kansas and northern Oklahoma. In general, both leaf and stem rust developed very late in this area this spring. This probably was partly due to the winterkilling of much of the volunteer and early sown wheat, which normally carries much rust over the winter in Texas and Oklahoma, and partly to the cool weather that has prevailed all spring. Small spots of both leaf and stem rust were found in southern Kansas early in May and much rain has fallen since that time, but temperatures have been too low for rapid development and spread of rust. Leaf rust became very severe in central Kansas only within the past two weeks and wheat is now nearly mature.

An automobile trip through many counties in the northwestern part of Kansas has just been completed. Prospects for an excellent crop in that section are very good. Much wheat on fallow land is nearly four feet tall. It is very thick and succulent, however, and is only in the milk stage. The growers fear stem rust, but the writer was unable to find more than a few scattered uredinia in any field. Leaf rust also is very scarce in the northwestern part of Kansas. In the southwestern part of the State the crop was severely injured by frought in April and generally is in poor condition. Very little leaf rust and only occasional small apots of stem rust are present in that section. The crop also is very short and thin in northwestern Oklahoma and the panhandle region of Texas.

Harvest is beginning in southern Kansas but will not be in full swing for several days yet. Cutting is general in southeastern Kansas where most of the wheat is handled with binders. The crop, in that section was very severely injured by winterkilling and stands are very thin. Only a small amount of both leaf and stem rust was found in southeastern counties on June 9 and 10.

At Manhattan leaf rust readings have just been completed on about 1,400 selections of winter wheat. Leaf rust is very severe, and stem rust is developing rapidly now. Infection of both rusts came too late to cause much damage here, but an excellent crop of spores has developed for distribution to wheat-growing areas farther north.

Fort Hays Branch Experiment Station, Hays (Cereal Agrenomy, A. F. Swanson)

NEBRASKA

North Plantt Substation, North Platte (Cereal Agronomy, N. E. Jodon)
(June 17)

Lodging is severe in the winter-wheat varieties on summer fallow. Minturki agreears to be the most resistant.

Sorghum varieties were seeded June 12 and emerged June 17. Three varieties of proso were seeded on the 17th.

Heavy rains washed out or covered much of the corn. With the low temperature, this resulted in rather poor stands. No stand at all was secured from some hybrids supplied by Mr. Richey. This probably was due to the temperature factor, as Substation Maite, used as a check, produced a fair stand. Replantings were made as late as June 5 and 6.

The first part of June was characterized by high humility, low wind velocities, and low evaporation. The rainfall for the first two weeks was 2.33 inches. A precipitation of 12.22 inches has been recorded since the middle of April. Temperatures ranged from 42 degrees to 90 degrees.

Mr. J. Allen Clark visited the Station on June 13 and 14; he found the first pustule of stem rust June 13 on Oro wheat.

(July 2)

Three varieties of proso were seeded June 17. A good stand was secured in spite of the washing rain on the 19th.

Stem rust is very prevalent, although not yet loing any serious damage. Secondary pustules were found June 20, seven days after the first infection.

Harvest begins immediately after the Fourth. The yields will be exceptionally high, but the effect of longing probably will cause some reduction on fallow plots. All winter-wheat varieties on fallow, except Tenmarq and Minturki, are so badly lodged that it is not possible to make any distinction in the degree of lodging. The winter wheat and barley nurseries also are flat.

Precipitation amounting to 2.29 inches fell during the second half of June. On June 19 1.51 inches were recorded, and the last rainfall, June 24, amounted to 0.60 of an inch. Stored soil moisture this season is as great as has ever been recorded at North Platte.

SOUTH DAKOTA

U. S. Cereal Field Experiments, Redfield (Wheat Im rovement, E. S. McFadden)

NORTH DAKOTA

Northern Great Plains Field Station, Mandan (Cercal Agronomy, V. C. Hubbard) (July 2)

The weather for the last half of June was favorable for the growth of cereals and leaf and stem rust of wheat. Leaf rust and stem rust were first noted on June 16 on Little Club and Hard Federation, respectively. Stem rust has spread until light infections may be found in any part of the nursery.

All of the wheats in varietal plots are first headed. Mearly all of the varieties in the nursery are first headed. Many of them are fully headed. Reward and Vernal enter were first headed on June 18.

Plant aphids are unusually numerous and are causin some damage to wheat in the nursery this year.

Many fields of wheat on farms are headed out. Oats and barley are headed or nearly headed. Winter rye is being harvested on a few farms.

Northern Great Plains Field Station, Mandan (Flax Breedin;, J. C. Brinsmade, Jr.)(July 5)

The last half of June was generally hot and ary. The maximum temperature was SS degrees on June 27 and the minimum, 45 degrees on June 16 and 30. The precipitation for this period was 0.53 of an inch. The total precipitation recorded in June was only 1.50 inches, which is nearly 2 inches below the average for June for the past 55 years. Hot, dry weather without precipitation continued during the first five days of July.

Flax in plots and nurseries has been making very rapid growth but is beginning to suffer from drought.

Complete emergence was obtained in all nursery rows about June 15. In the nursery on flax-sick soil, where there were only a few scattered plants that emerged early, about May 25 to 30, the early plants were clipped back to just above the first leaves, to avoid having to take two sets of blooming and ripening notes. The same was done in the corresponding 5-foot rows on uninfested soil, though the stand of early plants was somewhat better in the uninfested soil than in the flax-sick soil nursery. Basal branches of the same size or smaller than the late plants were left unclipped. In the classification nursery and S-foot rows of hybrid material, where there were early plants in every row and almost complete stand of early plants in some rows, the early plants were not clipped.

First blooms appeared June 18 in the glots sown April 21 in the date-and-rate-of-seedin; and tillage experiment and June 24 in plots sown April 30. The plots sown April 21 are now practically through blooming. The varietal plots and most of the classification nursery are now in bloom.

In the classification nursery the plants that emerged late are now only about three or four inches high, and probably will be two to three weeks behind the early plants in getting reacy to bloom.

Wilt has developed rapidly during the post week. Some susceptible varieties, which emerged with good stands, have almost completely succumbed during the past few days. Up to about two weeks ago there was very little wilt in evidence in the flax-sick soil nursery.

Many cankered plants have been noted in early material in both plots and nursery. Prompt cultivation after rain doubtless prevented serious injury from canker in nursery rows.

The first series of flax varietal plots looks well. The stands are regular and uniform, and there are very few weeds. In the second and third series, in spots where wind damage was severe, stands are not good even where the damaged areas were reseeded.

_ . Crops in General are likely to suffer severely unless we have rain soon.

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith)

Most cereal crops are now in excellent condition. Most varieties of winter wheat and early varieties of spring wheat are fully headed. A severe wind yesterday broke over some heads of grain, especially some varieties of spring wheat in the nursery.

The first few pustules of leaf rust were observed at the Substation on June 21 and the first of stem rust on June 27. Neither rust has become abundant yet.

Temperatures were below normal during most of the month of June. A maximum of 84 degrees was reached on the 11th and 17th, and the temperature was above 80 degrees on a few other days. The minimum was 41 degrees on the 5th. A total precipitation of 4.31 inches was recorded on 13 days. This is about an inch above normal for June. The heaviest rains were 1.15 inches on the 20th and 1.32 inches on the 22nd.

The Substation was visited last week by Messrs. C. N. Ainslie and Robert Shotwell, Government entomologists. Only a few grasshoppers are noticeable this summer. Reports indicate that some fields of wheat in the vicinity have been injured by cutworms but no serious injury has been noticed at the Substation.

Agricultural Experiment Station, State Collège Station, Fargo (Flax Diseases, L. W. Boyle)

Langdon Substation, Langdon (Wheat Improvement, G. S. Smith) (June 30)

Small grains are making very satisfactory growth. Because of the favorable weather conditions, tillering has been rather extensive. Cultivation and hoeing have kept the numerous weeds well in check.

The precipitation for the month of June has totalled 3.43 inches. This was recorded on 13 different dates; on no one day was there more than three-fourths of an inch. In general, the temperature has been moderately warm. The minimum was 30 degrees on June 6, and the maximum was 35 degrees on June 12.

MONTANA

Judith Basin Branch Station, Moccasin (Cereal Agrenomy, B. B. Bayles)

WESTERN BISIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, L. L. Davis)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines) (W. K. Smith)

Arricultural Experiment Station, Pullman (Stinking Smuts of Wheat, H. H. Flor)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)
June 23)

Growing conditions for crops have been very unfavorable in most sections of the Columbia River Basin in Oregon. For the most part the weather has been cold and dry. The rainfall at Moro from March 1 to date has been only 1.3 inches, with not enough at any one time to do any good. The total precipitation since September 1, 1929, has been only 7.83 inches. The subnormal precipitation (3.07 inches) for the crop year ending August 31, 1929, resulted in a much less than normal carry-over of soil moisture in fallow land. As a result of the two successively dry seasons, all cereals have suffered severely from drought. In Sherman County there will be less than half of a normal wheat crop. Winter wheat on the Station is poorer than the poor crop of last year, but the spring wheat is better. All grains have been fully headed for some time and will ripen rapilly unless the weather remains cool. During the past two weeks the weather has been cooler than normal with near-freezing temperatures at the higher elevations.

Agricultural Experiment Station, Corvallis (Foot Rots of Wheat, Roderick Sprague)

. · CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones) (July 2)

The Station rice improved materially during June. Plots with thin stands have stooled well, and the rice has a good color. In some of the fertilizer plots, on which the water is held continuously, there is considerable water plantain, a little water grass, and a few other weeds but probably not enough to materially reduce the yields of rice. Water grass has been hand pulled three times in the varietal and nursery seedings.

Rice on the 40-acre tract that was purchased this spring, for Station use has improved materially during June.

An implement shed 20 feet wide and 48 feet long was built in June. Such a shed has been needed for 15 years.

The rice croi in general has made about normal growth during the month of June.

The mean temperature for June was slightly higher than for the same month last year. The maximum temperature was 104 degrees on June 14, the minimum 50 degrees on June 26, and the greatest daily range 44 degrees on June 14.

The rice market has held about steady for the past month. Depending upon the quality, rough rice varies in price from \$1.90 to \$2.25 per hundred.

University Farm, Davis (Cereal Agronomy, G. A. Wiebe)

Agricultural Experiment Station, Borkeley (Coreal Smuts, F. N. Briggs)



CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22 July 20, 1930 No. 17
Personnel (July 11-20) and Field Station (July 1-15) Issue

PERSONNEL ITEMS

- Mr. C. H. Kyle, senior agronomist in corn investigations, returned on July 15 from the southern corn-growing area, his work having been interrupted for two weeks as the results of a severe storm which shredded the leaves of the corn plants and made it impossible to get the leaf-area determinations that had been planned for the last two weeks in July. Mr. Kyle expects to leave Washington again on July 31 for points in Florida, Georgia, South Carolina, Louisiana, and Tennessee. He probably will return to Washington about the middle of October.
- Dr. J. H. Martin, agronomist in charge of grain sorghum and broomcorn investigations, will leave Washington about July 25 for an extensive trip in the grain sorghum and broomcorn districts. He will inspect cooperative experiments that are being conducted in Oklahoma, California, Arizona, New Mexico, Colorado, Nebraska, Kansas and Texas. Dr. Martin also will confer with officials of cooperating experiment stations and will examine grain so: ghum and broomcorn crops on farms.
- Mr. H. McKinney, senior pathologist in charge of cereal-virus-disease investigations, returned to Washington on July 11 from Baton Rouge, La., where he took field notes on corn mosaic experiments conducted in co-operation with the Louisiana Agricultural Experiment Station.

Mr. F. D. Richey, senior agronomist in charge of corn investigations, recently spent two days in Boston, Cambridge, and Wood's Hole, Mass., and New Haven, Conn., in conference with geneticists and research workers.

Mr. William K. Smith was appointed agent, effective July 1, to have charge of the cooperative investigations and experiments in cereal breeding for smut resistance at Pullman, Wash., during the absence of Dr. E. F. Gaines for the six months beginning July 1.

Mr. T. R. Stanton, senior agronomist in charge of oat investigations, who last reported from Davis, Calif., wrote from Ames, Ia., on July 14 that on June 21 he visited the Oregon Agricultural Experiment Station at Corvallis

Owing to its rather stiff straw, the Lee winter oat is being tested as a hay variety for growing with winter vetch. The variety also may prove of value for grain production in the Willamette Valley. Oats in general in western Oregon were in good condition. At the Sherman County Branch Station, Moro, small grains had been severely affected by drought and decreased yields are expected. Some few fields of wheat in the vicinity of Moro probably will yield 20 bushels to the acre. In Umatilla County, near Pendleton, wheat was in excellent condition, and yields of 50 bushels to the acre are in prospect.

Several small fields of excellent spring oats were seen near Puyallup, Wash. At Pullman, Wash., and Moscow, Idaho, oats and other small grains were in good condition. The early varieties of oats were just heading. The Markton oat is becoming popular in this section, but there is some complaint from farmers because of its color.

At Havre, Mont., small grains have been badly injured by the dry weather. Some fields of wheat apparently will not be worth harvesting. Regardless of deficient precipitation the oat varieties on the station at Havre were in fair condition. The Idamine variety is one of the most promising for this section of Montana. At Moccasin recent showers have greatly benefited spring small grains but they were too late to aid winter wheat.

At Sheridan, Wyo., and Ardmore, S. Dak., cereal crops were being damaged by dry, hot weather. Under irrigation at Newell, S. Dak., oats were in good condition. Yields of 70 to 80 bushels to the acre were in prospect. Dry land crops had suffered because of deficient precipitation.

In Iowa a good crop of winter wheat is being harvested. Because of the recent hot weather oats will not fulfil the good prospects of a few weeks ago. The intense heat which prevailed from about July 4 to 12 has caused serious prelature ripening of oats. As one newspaper expressed it, "they were being cooked in the milk stage." Corn generally in eastern Nebraska and Iowa appears to be in excellent condition. On the Agronomy Farm at Ames winter wheat harvest is completed, and threshing is in progress. Oat harvest is just starting. Barley harvest is in progress.

Mr. Edmund Stephens was appointed junior agronomist, effective July 1, in connection with the cooperative work with wheat and other small grains at the Woodward Field Station, Woodward, Okla.

Mr. Coit A. Sumeson was appointed junior agronomist, effective July 1, in connection with the cooperative work with wheat and other small grains at the Nebraska Agricultural Experiment Station, Lincoln, Nebr.

Mr. Joe L. Sutherland was appointed junior agronomist, effective July 1, in connection with the cooperative work with wheat and other small grains at the Judith Basin Substation, Moccasin, Mont.

Mr. Robert B. Webb was appointed agent, effective July 19, to assist in the cooperative cereal investigations and experiments at the Sherman County Branch Station, Moro, Oreg.

VISITORS

Mr. Clyde McKee, head of the department of agronomy and vice dean of agriculture, Montana State College of Agriculture, who is on sabbatical leave, is spending several weeks in Washington. While using the facilities of the Department library he is making the Office of Cereal Crops and Diseases his headquarters.

MANUSCRIPTS AND PUBLICATIONS

The brief art cle entitled "Oat Varieties Highly Resistant to Crown Rust," by H. C. Murphy and T. R. Stanton, appears as a Note in the Journal of the American Society of Agronomy.

Circular 119 entitled "Relation of Dust Fungicides to Flow of Small Grains through Drills and to Drill Injury," by R. W. Leukel, dated July, 1930, has been received from the Government Printing Office.

Nine articles for the Yearbook of Agriculture, 1931, written by members of the staff of the Office of Cereal Crops and Diseases, have been approved by the Chief of the Bureau and submitted for publication. The Titles are as follows:

- 42 Selecting Pop-Corn for Increased Popping Expansion, by A. M. Brunson.
- 43 Stem-Rust Losses Reduced by Using Proper Fertilizers on Land, by Helen Hart.
 - 44 Well-Fed Corn Plants More Resistant to Cold, by J. R. Holbert.
- 45 Goat Grass, a New Wheat-Field Weed in the Southern Great Plains, by C. O. Johnston.
- 46 Seed Treatment and Warm Soil Improve Sorghum Stands, by J. H. Martin.
 - 47 Breeding Crop Plants Resistant to Insect Attack, by J. H. Parker.
 - 48 Effects of X-Rays on Heredity, by L. J. Stadler.
- 49 Oats, Winter, Hardier Varieties Needed, by T. R. Stanton and F. A. Coffman.
- 50 Pasturing Winter Wheat in the Central Great Plains, by A. F. Swanson.
- 51 A manuscript entitled "Growing Rice in California," by Jenkin W. Jones, was submitted on July 19 for publication in the Farmers' Bulletin series. This is a revision of Farmers' Bulletin 1240.

FIELD STATION CONDITION AND PROGRESS

(All experiments except those conducted at the Arlington Experiment Farm, Rosslyn, Va., are in cooperation with State agricultural experiment stations or other agencies.)

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISTANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

ARKANSAS

Agricultural Experiment Station, Fayetteville (Rice Diseases, E. C. Tullis)

MISSOURI

Agricultural Experiment Station, Columbia (Rice Agronomy, B. M. King)

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

OHIO

Agricultural Experiment Station, Wooster (Corn Investigations, G. H. Stringfield)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, H. C. Murphy)

ILLITOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, LaFavette (Corn Rots and Metallic Poisoning, J. F. Trost, Acting in Charge)

Purdue University Agricultural Experiment Station, LaFayette (Leaf Rusts, E. B. Mains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, R. G. Shands, Acting in Charge)

MINNESOTA

Agricultural Experiment Station, University Form, St. Paul (Wheat Breeding, E. R. Ausemus)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman) (M. N. Levine)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (July 16)

The first half of July was hot and dry with no indication of relief.

The last seeding of grain sorghums is being thinned to the desired stand. The feterita in the first date-of-seeding-plots is heading. The sorghums have been growing rapidly, but will need rain to continue.

Mr. Edmund Stephens, newly appointed junior agronomist in the cooperative wheat and small grain investigations, reported for duty on July 12; he is now threshing the wheat in the varietal plots.

The maximum temperature was 104 degrees on the 12th; minimum, 54 degrees on the 15th. A precipitation of 0.12 of an inch was recorded on July 1.

KANSAS "

Agricultural Experiment Station, Marhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson) (July 15)

Although the weather of the past month has been ideal for harvesting and threshing small grains, it has been too dry and hot for row crops, pastures, and meadows. Only 0.07 of an inch of rainfall has been recorded since June 18 and none since June 27. Temperatures of 100° or above were registered on nine consecutive days of July ending with 106° on the 12th.

Although corn has been injured somewhat, it has stood the heat and drought remarkably well due to the plentiful reserve of subsoil moisture. A good rain for the next few days still would make possible an average crop in most fields of this locality.

Combining is practically finished and bundle threshing is well along toward completion. The quality of all small grain is unusually high this year. Wheat yields in parts of the south-central and scuthwestern portions of Kansas were very low, but in the northern portion yields generally exceeded expectations. Yields of oats also were high. On the Agronomy Farm one field of Kanota yielded 100 bushels and another 97 bushels to the acre.

Considerable interest was manifested last week in the meetings in the southern Great Plains area sponsored by the Federal Farm Board in the interest of better wheat prices through reduced acreage.

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston) (July 18)

July has been marked by extremely hot dry weather. Beginning July 4 there were nine consecutive days on which maximum temperatures of 100° F. or higher were recorded. No rain has fallen at Manhattan since June 14 except two very light showers of a trace each. Corn and sorghums are in serious need of moisture although they have stood the drought remarkably well so far.

All experimental wheat plots in the leaf-rust project have been harvested, and threshing is now in progress. An extremely heavy infection of stem rust occurred in the rust nursery during the last two weeks of June and early July. Early varieties escaped injury but late varieties and spaced hybrids were severely injured. Stem rust also appeared on oats the last week in June, and a very heavy infection had developed on late varieties by July 10. Early varieties escaped infection.

Fort Havs Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson) (July 15)

The weather continues dry; the last effective rain was recorded on June 15. It has been an ideal season for combine methods of harvesting wheat. Some relief from the high temperatures of last week has been helpful to growing crops. Row crops are not yet in danger, but it has not been possible to store moisture in the new seed beds for wheat.

Harvesting and threshing have been completed on the Cereal project and generally throughout this section except where grain was headed. Wheat yields were slightly above the average for this section and the quality of the wheat very high. On the Cereal project the average yields for wheat probably will be 35 bushels although some of the best varieties are estimated at slightly above 40 bushels, with a test weight of 61 to 63 pounds. In the nursery a few 50-bushel yields are expected. Oats and barley probably will average around 30 bushels to the acre.

Early this morning the field laboratory on the Dry-Land project was completely destroyed by fire. Many records and much equipment were lost. The fire was beyond control when discovered and presumably was started from the soil ovens. The building had been remodeled this spring at a considerable cost and was well equipped. Climatic and soil moisture records for the season were lost. Fortunately, permanent records and those of the current crops were at the main office on the campus. The machine shed and seed house did not burn.

Secretary of Agriculture Arthur M. Hyde and Mr. Alexander Legge of the Federal Farm Board, accompanied by Dr. C. W. Warburton and Dr. Nils Olsen, were recent visitors at the Station. President F. D. Farrell and Dean L. E. Call an others from the Kansas State College also visited the Station recently.

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, N. E. Jodon)

SOUTH DAKOTA

U. S. Cereal Field Experiments, Redfield (Wheat Improvement, E. S. McFadden)

NORTH DAKOTA

Northern Great Plains Field Station, Mandan (Cereal Agronomy, V. C. Hubbard)

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (July 15)

Hot, dry weather has prevailed during the first half of July. Temperatures have averaged above normal for this time of year. The maximum temperature was 102° on July 15 and the minimum, 47° on July 13. The total precipitation recorded for the first half of July was 1.37 inches, of which 1.36 inches fell in about 40 minutes on July 7. This was of great benefit to crops though a considerable percentage of it ran off without having time to soak in. A little hail which accompanied the rain apparently did no serious damage to crops on the Station. Crops in some localities, especially in a small area southwest of Mandan, were severely damaged by hail.

Flax has developed rapidly during the first half of July. The flax in plots seeded April 21 and April 30 is practically through blooming and is beginning to ripen. Flax sown May 20 and May 31 is in bloom, but that sown on June 10 has not yet begun to bloom. Weeds, especially Russian thistles, are very bad in plots sown April 21 and April 30. Later seedings are much cleaner.

Wilt has developed rapidly during the first half of July. Many susceptible varieties already have succumbed completely on flax-sick soil. Canker injury also is prevalent in spots where stands are thin.

On a trip by auto to Hettinger, N. Dak., on July 10 many flax fields were noted along the way in various stages of development. The early sown fields, which were practically through blooming, appeared very promising. Many of the late-sown fields appeared to be suffering from drought and weed growth and could not be expected to amount to anything without abundant rainfall during the remainder of the season.

Mr. A. C. Dillman and Mr. J. Allen Clark arrived at the Station on July 15.

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith)(July 15)

Hot, dry weather has prevailed during most of the first half of July. The maximum temperature was 103 degrees on the 10th. There has been no rain with the exception of a few light showers.

Grain varieties have made rapid development and will ripen somewhat earlier than usual. Winter-rye varieties are ripe and winter wheat is beginning to ripen. Early varieties of oats and barley are turning color a little. Most crops look fairly well but a good rain is needed.

Corn, which was backward throughout June, is now making rapid growth and is tasseling out. The first bagging of ears preparatory to selfing and crossing in the corn nursery was done July 12.

Fifty heads of wheat have been crossed. Most of these were Hope crosses crossed back on the other parent variety.

The ends of the nursery rows are being trimmed and tags attached preparatory to harvesting.

Both leaf and stem rust are present to some extent, especially in the winter grain. Artificial inoculation of susceptible border rows with stem rust was accomplished last week with the aid of a hypodermic needle.

Mr. J. Allen Clark and Mr. A. C. Dillman visited the Substation yesterday. Other official visitors this month were: Mr. Ernest George and Mr. F. A. Mason, of the Northern Great Plains Field Station at Mandan, and Glenn S. Smith of the Langdon Substation.

Agricultural Experiment Station, State College Station, Fargo Flax Diseases, L. W. Boyle)

Langdon Substition. Langdon (Wheat Improvement, G. S. Smith) (July 15)

Frequent rains have continued to supply the crops with sufficient moisture, and growth has been very rapid. Both nursery and varietal plots will be considerably taller than last year and at present are nearly a week more advanced than at this time last season. Wheat and barley varieties, also are fully headed. First heading notes are complete on the yield trial nursery, and the later sown hybrid material is just heading.

Stem rust was first seen on July 7. The ensuing week was ideally suited to the development of rust, every morning bringing a shower or heavy dew followed by a hot and sultry day. At the present time some of the susceptible varieties show 25 to 40 per cent infection. Stem rust has been observed on some fields of Ceres wheat in the vicinity.

On July 1 and 2, a Cavalier County farm tour was held under the direction of County Agent Barret and Mr. D. Willard of the Great Northern Railway. About 60 people gathered at the Substation and after looking over the experiments in progress left for the experiment station at Morden, Manitoba. Thence the party went south and east visiting farms en route. Especial attention was given to the weed problem.

On July 11 Mr. H. G. Ukkelberg, of University Farm, St. Paul, Minn., reported finding plenty of rust in this section of the State.

MONTANA

Judith Basin Branch Station, Moccasin (Cereal Agronomy, B. B. Bayles)

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, L. L. Davis) (July 9)

Weather conditions have been favorable for the growth of cereals in June and the first part of July. A rainfall of 0.92 of an inch was recorded in June. There has been no rain so far in July. The minimum temperature since the first of June was 32° which was recorded on June 5, 9 and 15.

No noticeable damage was caused by this temperature. The maximum temperature recorded was 100° on July 8.

Irrigation wa'er has been plentiful and up to this date the plots and nurseries have been irrigated four times. High winds soon after irrigation caused some lodging in the barley and oat nurseries. All varieties in the barley, oat, and wheat nurseries have headed. A few barley varieties will be ripe in about 10 days.

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines) (W. K. Smith)

Agricultural Experiment Station, Pullman (Stinking Smuts of Wheat, H. H. Flor)

OREGON

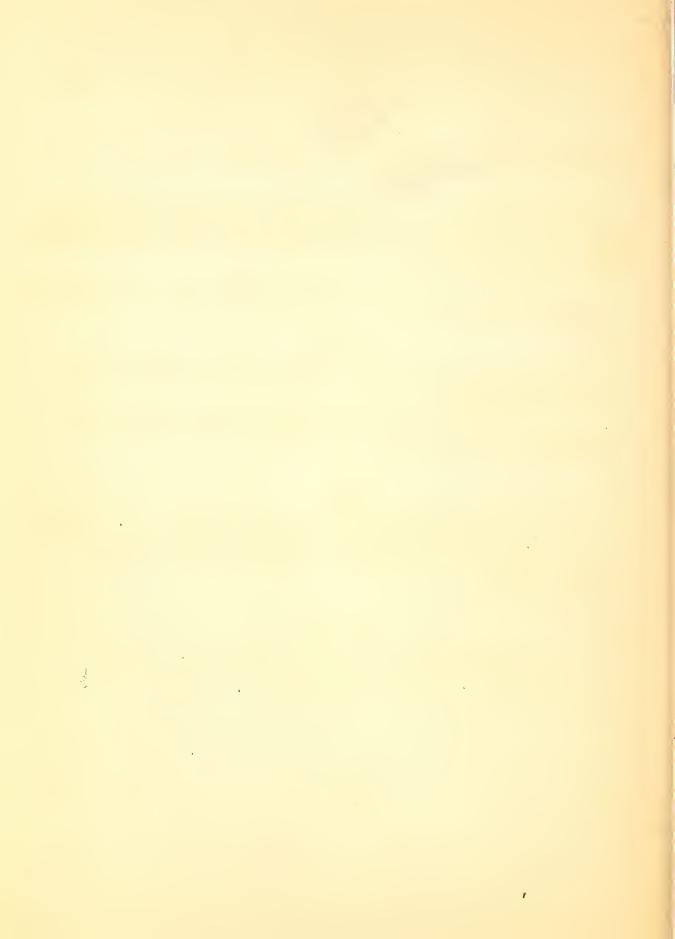
Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

Agricultural Experiment Station, Corvellis (Foot Rots of Wheat, Roderick Sprague)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)

University Farm, Davis (Cereal Agronomy, G. A. Wiebe)





CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22

July 31, 1930
Personnel (July -21-31) and General Issue

Mo. 13

PERSONNEL ITEMS

- Mr. B. Bayles, assistent agronomist in charge of the cooperative cereal-agronomy experiments at the Judith Basin Substation, Moccasin, Mont., will come to Washington early in August to confer with the principal agronomist in charge of the Office regarding future cooperative cereal research.
- Dr. J. G. Dickson, agent in the cooperative coreal-disease investigations that are being conducted at Madison, Wis., who left the United States in March for travel in Europe, wrote from Saratoff on July 10 that he expected to be in Leningrad in another week. He had been making a study of the grain crops of Sovict Russia from south to north and expected to finish in the Volga region the following week. Dr. Dickson plans to be in Berlin by August 10 and in London on August 12. He reports having had a profitable trip.
- Mr. M. A. McCall, principal agronomist in charge, will leave Washington on August 3 for Indiana and Illinois to consult with efficials of agricultural experiment stations and field employees of the Office regarding cooperative experiments with cereals and coreal diseases. He will return about August 12.
- Mr. Rollo W. Woodward was appointed junior agronomist, effective July 1, in connection with the cooperative wheat breeding experiments at the Utah Agricultural Experiment Station, Logan, Utah.

MANUSCRIPTS AND PUBLICATIONS

- 52 A manuscript entitled "Further Studies on Penicillium Injury to Corn," by Helen Johann, James R. Holbert, and James G. Dickson, was submitted on July 30 for publication in the Journal of Agricultural Research.
- 53 A manuscript entitled "Effect of Leaf-Rust Infection on Yield of Certain Varieties of Wheat," by C. O. Johnston, was approved on July 31 for submittal to the Journal of the American Society of Agrenomy.

Galley proof of article entitled "An Aberrant Physiologic Form of Puccinia triticina Eriks.," by C. O. Johnston, for publication in Phytopathology, was read on July 23.

Galley proof of article entitled "Infection Phenomena and Host Reactions caused by <u>Tilletia tritici</u> in Susceptible and Monsusceptible Varieties of Wheat," by <u>H. M. Woolman</u>, for publication in Phytopathology, was read on July 23.

Galley proof of article entitled "Relation between the Vigor of the Corn Plant and Its Susceptibility to Smut (<u>Ustilage zeae</u>)," by <u>C. H. Kyle</u>, for publication in the Journal of Agricultural Research, was read on July 31.

Page proof of article entitled "Titration Curves of Eticlated and of Green Wheat Seedlings Reproduced with Buffer Mixtures," by A. M. Hurd-Karrer, for publication in Plant Physiology, was read on July 24.

The article entitled "The Behavior of Winter Wheat in Artificial Environments," by <u>H. H. McKinney</u> and <u>W. J. Sando</u>, appears in Science 71(1852): 668-670. June 27, 1930.

The paper entitled "Apparatus and Method for Obtaining Sterile Filtrates of Biological Fluids," by <u>Emery R. Ranker</u>, appears in Phytopathology 20(7): 569-573, figs. 1-2. July, 1930. (Dr. Ranker was formerly Associate Physiologist in the Office of Cereal Crops and Diseases.)

The paper entitled "Notes on Phyllosticta rabici on Chick Pea," by Roderick Sprague, appears in Phytopathology 20(7): 591-593. July, 1930. (The work discussed in this paper was done by Dr. Sprague before his appointment on the staff of the Office of Cereal Crops and Diseases.)



CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22 August 10, 1930 No. 19
Personnel (Aug. 1-10) and Field Station (July 16-31) Issue

PERSONNEL ITEMS

Dr. H. B. Humphrey, senior pathologist in charge of cereal-rust investigations, returned to Washington on August 6 from an extended trip in the middle west and Manitoba, Canada, in the interests of cereal-rust research. While in Manitoba Dr. Humphrey visited Macdonald, where the Dominion Rust Research Laboratory is conducting a 400-acre sulphur-dusting experiment in connection with the Laboratory's cereal rust prevention program. During the course of his field trip he inspected and took notes on more than 400 fields of wheat, oats, barley, rye, and flax. These notes indicate that the most generally prevalent and destructive diseases of wheat in the string-wheat area this year were the foot and root rots.

Dr. J. H. Martin, agronomist in charge of grain sorghum and broomcorn investigations, who left Washington on July 25 for an extensive trip in the grain sorghum and broomcorn districts, wrote on July 30 that at Lawton there had been some very striking chinch bug injury. The milos were almost completely killed and the feteritas and hegari were nearly all destroyed, while kafirs and sorges (except Leoti Red) were only slightly injured. Most of the kafir-milo hybrids were as susceptible to injury as pure milo, but Manko maize, Fargo milo, and Swanson's "Custer" milo showed considerable resistance.

Corn showed considerable injury from drought all the way from Washington. Sorghums are still green but fold up their leaves and try to hold water these hot dry days. Rain is needed badly in both Kansas and Oklahoma to produce a crop of kafir.

- Mr. M. A. McCall, principal agronomist in charge, returned to Washington on August 8 from a 5-day trip to Indiana and Illinois.
- Mr. F. D. Richey, isenior agronomist in charge of corn investigations, left on August 10 to visit cooperative corn experiments in Ohio, Illinois, Minnesota, North Dakota, Wisconsin, and Iowa, and to confer with field employees of the Office and officials of State agricultural experiment stations. Mr. Richey will be in the field about two weeks.
- Mr. Benjamin H. Roche was appointed agent, effective August 1, to assist with the cereal-disease investigations that are being conducted in cooperation with the Wisconsin Agricultural Experiment Station at Madison, Wis. His research will be mainly on barley scab.
- Mr. G. M. Smith, assistant pathologist in the cereal-disease investigations conducted in cooperation with the Purdue University Agricultural Experiment Station, LaFayette, Ind., was in Washington on August 7 and 8 for conferences with project leaders of the Office.

VISITORS

Dr. James A. Faris, pathologist and assistant director of the Cuba Sugar Club Experiment Station, Central Baraguá, Province of Camaguey, Cuba, was an Office caller on July 28.

MANUSCRIPTS AND PUBLICATIONS

- 54 A brief article entitled "Another Host of <u>Ustilago</u> striacformis (Westd.) Niessel., " by <u>C. C. Johnston</u>, was approved on August 2 for submittal to Phytogathology for publication.
- 56 A manuscript entitled "Inheritance of Type of Floret Separation and Other Characters in Interspecific Crosses in Oats," by <u>Victor H. Florell</u>, was submitted to the Journal of Agricultural Research on August 8.
- 57 A manuscript entitled "Character Studies of Wheat Back Crosses," by <u>Victor H. Florell</u>, was submitted to the Journal of Agricultural Research on August S.

Galley proof of article entitled "Some Applications of Statistical Methods to Agronomic Experiments," by <u>F. D. Richey</u>, for publication in the Journal of the American Statistical Association, was read on August 1.

Page proof of Farmers' Bulletin 1631 entitled "Broomcorn Growing and Handling," by John H. Martin and R. S. Washburn, was read on August 3.

FIELD STATION CONDITION AND PROGRESS

(All experiments except those conducted at the Arlington Experiment Farm, Rosslyn, Va., are in cooperation with State agricultural experiment stations or other agencies.)

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor) (M. N. Pope) (August 4)

The plots and rod rows of wheat, oats, and barley have all been threshed. Wheat is of good quality but short in straw and rather low in yield. Oats produced an average crop and barley a poor one. The relatively low yields probably are due to a rainfall deficiency for the year, amounting to 3.20 inches on April 1 and about 7 inches on June 14, when the wheat harvest was begun. The weather has been exceptionally favorable for harvesting and threshing.

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love) (August 6)

The harvesting of wheat, oats, and barley has been completed. Winterkilling was so severe and so uneven that it was not possible to harvest all of the wheat. Mevertheless, some very worth while results have been obtained, giving indications of the difference of winter hardiness of the different strains.

The oats and barley, however, came in good shape. They have been harvested in good condition and should give good comparative yields.

The harvesting of the wheat and oat hybrids also has been completed and considerable data of genetic value accumulated. These studies included such matters as the behavior of fatuoids in crosses, the inheritance of dwarf types in wheat, and the completion of a study on the inheritance of velvet node in wheat.

In addition to the genetic studies a large sowing had been made for practical purposes. In this were included wheat crosses between different types in an attempt to obtain high yielding, white-kerneled wheats.

Visitors to the plots included Prof. J. H. Neethling, of South Africa, Prof. G. J. Burton, of Kenya Colony, East Africa, and Mr. V. H. Florell, of the Office of Cereal Crops and Diseases. In addition to these men our cooperators came in from various parts of New York State on our recent field day to look over the experimental work.

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins) (July 23)

Unusual weather prevailed in June. Two new weather records were established. The precipitation for the month was 0.63 of an inch, which is the lowest so far recorded at this Station for June. Prior to 1930 the lowest rainfall for this month occurred in 1924, a total of 1.76 inches.

On June 27 the temperature was 103° F. This is the highest that has been recorded for the 20 years that records have been kept at this place. Previous to this year, the highest temperature here was 101.5° F. on June 13, 1911.

Work on the Station progressed nicely in June. The dry weather permitted the cleaning of the levees, roadways, and ditches, and the rough cultivation of cotton and soybean plots.

Some of the early rices and early seeded varieties in the date-of-seeding experiments are heading.

The unhealthy appearance of rice noted the latter part of May has disappeared. The majority of the commercial fields give promise of good yields. A few early sown fields are heading and will be ready for harvest the latter part of July or early in August.

Dean Dowell, of the Louisiana State University, was a visitor on the 19th. Professor Fletcher, of the Southwestern Louisiana Institute, and his class in agronomy were visitors on the 7th. Mr. T. C. Loh, a Chinese student doing advanced work at the Louisiana State University, comes to the Station frequently to obtain information about rice diseases and to collect specimens for study.

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

ARKANSAS

Agricultural Experiment Station, Fayetteville (Rice Diseases, E. C. Tullis)

MISSOURI

Agricultural Experiment Station, Columbia (Rice Agronomy, B. M. King)

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

OHIO .

Agricultural Experiment Station, Wooster (Corn Investigations, G. H. Stringfield)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins) (July 31)

This July has been one of the driest and hottest in the history of Ames. The total rainfall for the month has not exceeded half of an inch, nearly all of which fell on the morning of July 4. A deficient supply of subsoil moisture has increased the injury caused by the recent hot spell. Corn is badly burned, and the yield has been cut at least 25 per cent at the present time.

The most serious injury to the corn-breeding project has occurred among the inbred lines. The hot, dry weather has dried up the tassels and delayed silking to such an extent that many of the F₁ crosses planned for this year will not be obtained.

The season will not be a complete loss, however, as it is affording an opportunity to get some very desirable records on drought resistance. The dry weather has brought out marked differences in wilting and firing among the inbred lines and hybrids. Some lines and crosses have shown a high degree of resistance to the drought. Crosses involving badly fired lines have shown much more firing than those involving resistant lines.

Threshing is nearly completed on the Agronomy Farm. Early oats were not seriously injured by the dry weather, but late oats were dried up and are shriveled. Winter wheat was not seriously hurt, the yields of nearly all varieties exceeding 40 bushels per acre.

Agricultural Experiment Station, Ames (Crown Rust of Oats, H. C. Murphy)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, LaFayette (Corn Rots and Metallic Poisoning, J. F. Trost, Acting in Charge)

Purdue University Agricultural Experiment Station, LaFayette (Leaf Rusts, E. B. Mains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, R. G. Shands, Acting in Charge)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, E. R. Ausemus)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman) (M. N. Levine)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (August 2)

The weather of the last half of July was hot and dry. There has been no effective rain since June 9, and the earlier sorghums already have been reduced in yields. Many of the early varieties are heading, but the heads are small and the grain will be of small size unless rains occur soon.

. Bagging of seed heads has been started and will continue through August.

The maximum temperature for the last half of July was 105° on the 18th and 25th; minimum for the same period, 64° on the 23rd. The total precipitation for July was 0.28 of an inch from five showers.

Woodward Field Station, Woodward (Wheat Improvement, Edmund Stephens)
(August 2) :

The yields of the winter-wheat varieties grown at Woodward in 1930 are given below. In cases where the same variety was grown from different sources of seed, the source of seed is indicated in parentheses following the name of the variety. The yields are averages of four systematically distributed plots.

	Į.		Bushels
Variety	C. I. No.	Kansas No.	per Acre.
Nebraska No. 60			15.4
Nebraska No. 50			14.9
Local Turkey			14.7
Kharkof -Hays No. 2 (Hays) 6686		14.5
Turkey (Stillwater)			14.1
Kharkof - Hars No. 2(12.8
Kharkof (NSAC)	2193		12.6
Turkey (KSAC)	1558		12.6
Orc	\$220		12.5
Cooperatorla		499	11.8
Blackhull (XSAC)	6251		11.8
Superhard Blackhull	8054		11.4
Tenmarq (Hays)	6936		11.4
Tenmarq (KSAC)	6936		11.4
Blackhull (Hays)	6251		11.4
Ridit	6703		11.2
Tenmarq Selection		2637	11.2
Kanred (Hays)	5146		11.1
Kanred x Marquis		2644	11.0
Kanred x Marquis		2642	10.8
Kanred (KSAC)	5146		10.7
Kanred x Marquis		2640	10.3
Eagle Chief (Hays)			10.2
Fulhard	8257		10.1
Kanred x Marquis		2647	8.8
Prelude x Kanred		2628	8.1
Sibley's New Golden I.	c. 81		7.9
Kawvale	8180		7.4
Kanred x Hard Federat		2627	6.9
Early Blackhull (T.SAC	9 8356		6.7
Fultz			6.5
Early Blackhull (Hat's) 3356		6.3

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker) [July 29]

The following yields of winter-wheat varieties in triplicated plots on the Agronomy Farm at Manhattan are reported for 1930 by Prof. S. C. Salmon.

•						4
Variety	: I	Kansas N	0.	:	Bu. per :	Difference compared
Valle by	:	-		;	Acre :	with Kanred in com-
:	:				;	parable plots
	rom	I. – Ηε	rd	Who	eats	
		490	•		35.7	+ 2.1
Cooperatorka	1	2667			34.8 <u>a/</u>	+ 1.2
Crimean Sel. Nc. 50 (Nebr.	,	470			33.6	0.0
Superhard		2401			33.6	0.0
Kanred (checks)		382			. 32.9	- 0.7
Kharkof				٠	-	- 0.7
Oro		495			32 . 9	- 0.8
Blackhull		343		10	32.5 70.7	- 1.3
Turkey		570		•	32.3	- 1.6;
Kharkof (Hays No. 2)		2659			32.0	
Fulhard		2594			30.7	- 2.9
Prelude x Kanred		2628	•		28.5	- 5.1 5.1
Early Blackhull		483			28.5	- 5.1
Prelude x Kanred		2652			24.8	- 8.8
Vancos v Hard Federation		2627			25.4	- 8.2
	Froup	II F	Kanı	red	x Marquis	s Hybrids
Tenmarq	_	514			45.4	. + 6.8
Kanred x Marquis b/		2647			44.9	+ 6.3
Tenmarq		513			44.1	+ 5.5
		439			43.9	+ 5.3
Tenmarq Kanred x Marquis		2642			43.0	+ 4.4
		2637			42.0	+ 3.4
Tenmarq Sel.		2644			39.8	+ 1.2
Kanred x Marquis		2401			38.6	0.0
Kanred (checks)		2640			33.5	_ 5.1
Kanred x Marquis	7 20033	III	So	ft		
	Jrou <u>.</u>	500	50.	. 0	39.6	+ 2.0
Michigan Wonder		317	•		39.5	+ 1.9
Fulcaster .					39.1	+ 1.5
Harvest Queen ,		19			38.0	+ 0.4
Kawvale		2593				0.0
Kanred (checks)		2401			37.6	- 3.6
Currell		501			34.0	- 5.7
Nebraska No. 28		314			28.3	- J. (
·						

 $[\]frac{a}{b}$ Two plots only. $\frac{b}{b}$ Awnless. All others in this group are awned.

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson) (Aug. 2)

This July has been the second hottest and the third driest in the 72 years that accurate records have been kept at Manhattan. The mean temperature of 83.6 is 5 degrees higher than the normal for the month. Temperatures of 100 or more occurred on 19 days with a maximum of 109 on the 27th. The total rainfall was 0.57 of an inch compared with a normal of 4.52 inches for July. What rain there was fell in light showers and did little good. Only 0.64 of an inch of rain has fallen in the 6 1/2 weeks since June 18.

Controlled pollinations of corn in the nursery at Manhattan have been badly hampered, although pronounced differences in the ability of various selfed lines to withstand these extreme conditions are evident.

Most upland corn in this vicinity is virtually ruined. Late bottomland fields are holding on remarkably well and still have the possibility of fair yields if relief comes soon. Severe injury to corn is general in this region, reports from various localities indicating 50 per cent injury to almost complete failure.

Pastures are drying badly causing heavy runs of cattle. The third cutting of alfalfa will be very light to negligible on most fields. Considerable difficulty is being experienced in fitting land for wheat and especially for alfalfa seeding.

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows) [July 26]

The annual survey for wheat foot rots was made as usual this year, but it covered more territory than in previous years.

The take-all foot rot was found to be present over a larger area than ever Yound before. In addition to the central tier of counties in Kansas, where take-all is found every year, a severe epidemic was discovered in the vicinity of Enid, Okla., and south toward Kingfisher. In Kansas it was found in several counties from which it had not been reported in the past.

In many places this year take-all manifested itself in the white-head stage. This probably was due to the occurrence of moist weather rather late in the life of the wheat plant.

For the past few years the writer has kept records of the crop history of many wheat fields known to be heavily infested with take-all. These observations have shown that rotation and the use of sweet clover as a green manure crop are effective means of control.

Helminthosporium foot ret on winter wheat has claimed a heavy tell in certain regions this year. In central Oklahoma and the west central part of Kansas there was an intermixture of take-all and Helminthosporium. In the southwest pertien of Kansas and in the panhandle of Texas and Oklahoma, Helminthosporium was almost universally present. The same was true in the Judith Basin and around Havre, Mont. Colorado was nearly free of foot ret this year.

Field plots established this year near Plainview, Texas, gave evidence that seeding retarded until after September 30 helped to control Helminthosporium foot rot to a large extent. In the Judith Basin of Montana the earliest safe date of seeding is about September 12. Field observations in other regions have helped to verify the fact that retarded date of seeding is a large factor in the control of Helminthosporium foot rot in winter wheat.

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston)

Fort Hays Branch Experiment Station, Hoys (Coreal Agronomy, A. F. Swanson) (July 31)

Since the 15th of June there has been less than one inch of rainfall. On a number of days temperatures have been above 100°F. Not often does this section have such a long period of high temperatures and limited rainfall. It is remarkable how well sorghums are standing the drought. Since most sorghums have not yet reached the heading stage the crop is able to pass through a drought period with no ill effects provided a good seed bed is available. On the other hand corn on the same kind of seed bed can not withstand more than a limited number of days with temperatures above 100° even though the crop is neither tasselling nor silking. Corn is hurt on the station project and in this immediate section.

The writer returned recently from a short vacation in Colorado and noted that corn in the northeastern corner of that State and northwestern Kansas was in very good condition because of recent rains. In this region there is an area at least 100 miles square which has been favored with a very good wheat crop. This area also grows a great deal of corn and pinto beans. Corn seems to be a popular crop in a considerable part of eastern Colorado as well as in the extreme western end of Kansas. While the rainfall is limited in this region the altitude is higher than at Hays, which seems to make it a better corn section as the temperatures are less severe.

The following yields of winter wheat were obtained on the Cereal Project at the Hays station in 1930. These yields are the average of four plots, two of which were on cropped land and two on fallowed land.

<u>Variet</u> y	C. I. No.	Kans. No.	Yield (<u>Bu. per acre</u>)
Tennarq Sel.		2637	40.8
Nebraska Crimean No. 50			40.4
Tenmarq	6936		40.2
Kanred x Marquis		2642	33.8
Oro	6220		35.4
Kanred .	5146		37.9
Turkey	1558		36.9
Blackhull	6521		36.7
Superhard	8054		36.6
Kharkof (Hays No.2)	6686		36.2
Kawvale	S1 80		35.6
Local Ellis Co. Turkey			35.3
Fulhard	. 8257		35.1
Nebraska No. 60	6250		35.1
Cooperatorka			35.0
Kharkof	1442		34.8
Early Blackhull			34.7
Prelude x Kanred		2628	34.4
Fulcaster.	5471		34.2
Harvest Queen	6199		32.9
Nebraska No. 28	5146		28.5

[.] Other varieties grown in duplicate or single plots as new introductions from the nursery or outside sources ranged from 33.8 to 25.8 bushels.

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, N. E. Jodon) (July 30)

July weather has been ideal for the harvest. Winter and spring wheats have been threshed without the interference of rain. Showers occurred on the 28th, 29th, and 30th, delaying threshing of barley and oat varieties.

Two plots of Tenmarq wheat averaged 63.6 bushels on fallow. Kanred averaged 45.6 bushels on fallow. The difference was no doubt due to the fact that Tenmarq did not lodge.

Nursery threshing will begin within a few days. At present corn pollination is in full swing. The crossing block is in fine condition and it is probable that a considerable number of combinations will be secured both between North Platte inbred strains and between North Platte strains and some inbreds furnished by Mr. Richey. Corn had begun to show the effects of drought at the beginning of the last week in July.

Sorghum varieties have developed rapidly. The stand is good. Three varieties of proso were seeded June 17 and had headed out in slightly over a month later.

Data obtained on smut infection in all varieties of winter wheat grown at the substation indicate lower infection than last year, but the relative degree of infection is the same with a few exceptions.

SOUTH DAKOTA

U. S. Cereal Field Experiments, Redfield (Wheat Improvement, E. S. McFadden)

NORTH DAKOTA

Northern Great Plains Field Station, Mandan (Gereal Agronomy, V. C. Hubbard)

Dry weather has persisted during the last half of July and has caused premature and uniform ripening of the small grains. Early and late varieties ripened only a few days apart.

Wheat harvesting in the rod-row nursery was started July 28 and will be finished August 4. Fourteen common wheat varieties in plots were cut on July 26 and 28. Six durum varieties were harvested July 29.

Edkin, Sixty-Day, Gopher, Iogold, Markton, Rainbow, and two Green Russian oat selections, C. I. 2343 and 2344, have been harvested.

Alpha, Horn, and Hannchen barley are still standing but will be mature enough to harvest by August 4.

Temperatures during the last half of July ranged from 62° on the night of July 20 to 101° on July 26. On 14 of the 16 days the temperatures were above 80°. The precipitation amounted to 1.03 inches of which 0.93 of an inch was recorded July 20.

Station visitors the last half of July were Dr. H. B. Humphrey, Dr. H. A. Rodenhiser, Messrs. J. Allen Clark, A. C. Dillman, and Wallace Butler.

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (Aug. 6)

Flax and other crops suffered greatly from drought during the last half of July. The only rainfall of significance recorded during this period was 0.93 of an inch on July 19. Generally high temperatures prevailed during this period.

Flax wilt has been unusually severe in the nursery on flax-sick soil. Varieties usually considered wilt-resistant, Winona, Linota, N. D. R. 114, and especially Redwing- have wilted very badly. Buda, Bison, and Rio have stood up very much better, though occasional wilted plants have been noted in some rows of these varieties. Some rows of Bison and selected hybrid strains are entirely free from wilt even under these severe conditions. There was some further injury from heat canker, though prompt cultivation prevented serious damage.

No rust had been noted on flax at the time Dr. H. A. Rodenhiser was here on July 17. Rust was noted on some of the Indian varietie's July 21, and has increased markedly and spread to other varieties since that date.

On a trip from Mandan to Jamestown with Dr. H. B. Humphrey, July 25, flax fields were generally very poor just east of Bismarck, but improved as we drove east. Wilt and heat canker were prevalent in many fields.

The stand in one field near McKenzie, N. Dak., was reduced about 50 per cent (by heat canker. Occasional pustules of rust were noted on flax but no severe rust infection. One field of Bison and one that was apparently Buda, about 20 miles west of Jamestown, appeared very promising and might yield from 10 to 15 bushels per acre if conditions were favorable until harvest.

Flax plots sown at Mandan April 21 and April 30 in the date-and-rate-of-seeding-and-tillage experiment were harvested July 26. Flax sown May 10 and May 20 was harvested Au ust 6. The earlier varieties in the flax varietal plots are practically ready to harvest except in spots reseeded following the wind injury early in June.

On a trip west to Bozeman, Mont., on July 28 flax and grain crops west of Mandan looked generally poorer than east of Mandan. At Bozeman, Mont., will had appeared in one irrigated plot of Newland flax. Flax under irrigation appeared very promising. Rust and another infection very similar in appearance to the pasmo of cultivated flax were noted on the native perennial Linum lewisi on a mountainside near Bozeman. The plants of L. lewisi growing near Bozeman differed slightly in flower color and possibly in other characters from the native species growing near Mandan.

The maximum temperature was 101° on July 26; minimum, 43° on July 29. The precipitation was 1.03 inches.

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (July 23)

With the exception of a few cool days the weather has been hot and dry so far in July. The drought and hot winds are ripening the grain rather prematurely and harvest is now beginning about 10 days earlier than usual. Cereal crop yields probably will be reduced considerably below the expected yields.

Varieties of winter wheat and rye at the Substation were harvested last week. The harvesting of oats on the rotations is now in progress. A number of early oat varieties are ripe and probably will be harvested tomorrow.

The harvesting of winter rye in this vicinity was begun last week and spring wheat is bein; harvested this week.

Members of the North Dakota Crop Improvement Association from the Slope District of the State, together with a number of local farmers and their families, gathered at the Substation yesterday for a meeting and field day. After a short program of talks and discussion of various phases of crop production, the visitors were conducted through the Substation experiments. The various lines of work were explained and considerable interest was manifested in crop varieties and methods of tillage, etc.

Among the visitors who were present and talked to the farmers were Dr. H. B. Humphrey, Director P. F. Trowbridge, Dr. E. G. Booth, extension agronomist, Dr. Hanson, botanist at the North Dakota Experiment Station, and George Will, of the Oscar H. Will Seed Co., of Bismarck, N. Dak.

Other official visitors at the Substation since the middle of the month were Messrs. J. A. Clark, Karl S. Quisenberry, and R. W. Leukel.

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Langdon Substation, Langdon (Wheat Improvement, G. S. Smith)

MONTAHA

Judith Basin Branch Station, Moccasin (Cereal Agronomy, B. B. Bayles)

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, L. L. Davis)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines) (W. K. Smith)

Atricultural Experiment Station, Pullman (Stinking Smuts of Wheat, H. H. Flor)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

Agricultural Experiment Station, Corvallis (Foot Rots of Wheat, Roderick Sprague)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)

The weather in July was favorable for the growth of the rice crop. The average maximum temperature was 97.4°; the average minimum, 58.4°; the mean, 77.9° F. Early maturing rice varieties are heading and the midseason varieties are coming into the boot. With favorable temperatures in August and September the harvest should be reasonably early.

Dr. W. A. Taylor, Chief of the Bureau of Plant Industry; Mr. W. E. Whitehouse, of the Office of Foreign Plant Introduction, and Mr. J. E. Morrow, Superintendent of the Plant Introduction Station at Chico, were station visitors on July 29.

University Farm, Davis (Cereal Agronomy, G. A. Wiebe)



CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR FUBLICATION)

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Personnel (Aug. 11-20) and Field Station (Aug. 1-15) Issue

PERSONNEL ITEMS

Mr. Irvin M. Atkins, junior agronomist, was transferred on August 16 from the Office of Western Irrigation Agriculture to the Office of Cereal Crops and Diseases to assist in the cooperative wheat-improvement program at Denton, Tex., and to conduct experiments on the culture and improvement of wheat.

Mr. R. W. Leukel, associate pathologist, returned to Washington on August 16 from a trip in North Carolina, Georgia, Tennessee, Kentucky, Ohio, and West Virginia where data on seed-treatment plots of cereals and cereal diseases in general were obtained.

Mr. M. A. McCall, principal agronomist in charge, will leave on August 31 for a 10-day trip in Kansas, Minnesota, Illinois, and Indiana to confer with officials of agricultural experiment stations and field employees of the Office regarding future cooperative experiments. He will attend a conference of State station and Office personnel concerned with the hard red winter wheat improvement program to be held at Manhattan, Kans., on September 2, to discuss policies and plans concerned with the coordination features of this program. Mr. J. Allen Clark, senior agronomist in charge of western wheat investigations, and Dr. K. S. Quisenberry, associate agronomist in western wheat investigations, also will attend this meeting.

- Dr. K. S. Quisenberry, associate agronomist in western wheat investigations, returned on August 18 from an extended trip in the western wheat-growing area.
- Dr. G. F. Sprague, assistant agronomist in corn investigations, attended the meetings of the Southeastern Agronomy Section of the American Society of Agronomy that were held at Clemson College, Columbia, and Florence, S. C., from August 19 to 21, inclusive.

FIELD STATION CONDITION AND PROGRESS

(All experiments except those conducted at the Arlington Experiment Farm, Rosslyn, Va., are in cooperation with State agricultural experiment stations or other agencies.)

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA ,

State College of Agriculture, Athens (Coreal Agronomy, R. R. Childs)

. VIRGINIA.

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor) (Aug. 8)

The yields of fall-sown wheat were approximately 20 per cent below the average. Early jointing in the spring and the unusually dry weather were important factors in the low yields. Leaf rust was unusually light.

The two leading wheats for 1930 were of the Purplestraw type. Wharten traces its origin back to a natural wheat-rye hybrid which was back-crossed with Purplestraw in the \mathbf{F}_3 generation. Dixie is an early selection from Purplestraw which has been a consistently high yielder.

The season apparently was unfavorable to the Fulcaster type, as the yield of Nittany, for the first time, was significantly below that of the check.

Average Yield of Wheat in Triplicated Plots Compared with the Average of Six Check Plots, 1930.

Variety	C.I.No.	Bu. per Acre	Av. of six check plots Bu. per acre	Variety better or poorer than check Bu. per acre
Wharten		30.1	27.4	+ 2.7
Dixie	1.600	29.8	27.4	+ 2.4
Leap	4823	26.6	25.4	+ 1.2
Purplestraw	1957	26.5	26.0	+ .5
Poole	1979	25.1	25.4	3
Red Wonder	5780	25.4	26.3	- •9
Wheat-Rye 16-1A		24.6	26.3	- 1.7
V. P. I. No. 131		25.6	27.4	- 1.8
Fulcaster	6162	24.1	26.0	- 1.9
Mammoth Red	2008	25.9	58.0	- 2.1
Dietz	19g 1	23.3	25.4	- 2.1
Fulcaster	1945	23.0	26.0	- 3.0
Fultz	1923	24.9	28.0	- 3.1
Arlando		24.5	27.4	- 3.2
Nittany	6885	22.6	26.3	- 3.7
Red Rock	5976	21.6	25.4	- 3.8
Missouri Bluestem	1912	21.4	26.0	- 4.6
Shepherd	6163	20.4	26.3	- 5.9
Genessee Giant	1744	18.8	28.0	- 9.2
Purplestraw 1/	1915	26.9	0	

1/ Average of 17 check plots.

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)
(Aug. 5)

Weather conditions in July were nearly normal, although the precipitation was below the average for the month. The total precipitation for the month was 4.47 inches. For this month last year the rainfall was 3.70 inches. The 20-year average precipitation for July is 6.13.

The average maximum temperature for the month was somewhat higher than of last year, but the average minimum was about the same. The absolute maximum was 97° F. Last year it was 93. A maximum of 90° F. or above occurred on 26 days. The absolute minimum for the month was 69 degrees F.

The vegetative growth of many rices is stunted and the general vigor is poor.

A leaf-spot disease, noted last year for the first time to any great extent, appeared in rather alarming proportions towards the end of the month. Many commercial fields of rice are badly infested with barnyard grass.

During the early part of the month, the streams from which irrigation water is obtained were becoming contaminated with Gulf water, owing to lack of rain. In this section this condition was relieved by a heavy rain on July 14, and throughout the rice area by a heavy rain on the 29th. Rain near the source of these streams has been very beneficial.

A few fields of commercial rice have been harvested in this vicinity; two small fields have been threshed.

Director C. T. Dowell was a visitor on the 25th.

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

ARKANSAS

Agricultural Experiment Station, Fayetteville (Rice Diseases, E. C. Tullis)

MISSOURI

Agricultural Experiment Station, Columbia (Rice Agronomy, B. M. King)

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

OHIO

Agricultural Experiment Station, Wooster (Corn Investigations, G. H. Stringfield)

IOWA.

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, H. C. Murphy)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA :

Purdue University Agricultural Experiment Station, LaFayette (Corn Rots and Metallic Poisoning, J. F. Trost, Acting in Charge)

Purdue University Agricultural Experiment Station, LaFayette (Leaf Rusts, E. B. Mains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, R. G. Shands, Acting in Charge)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, E. R. Ausemus)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman) (M. N. Levine)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (Aug. 16)

The weather of the first half of August was hotter and drier than in July. The early sown varieties of sorghums and broomcorn and those sown at the usual date are attempting to head, but are faring badly.

Bagging of seed heads has continued, a larger number of heads will be required because of the reduced size.

Maximum temperature for the first half of August, 108° on the 2nd and 3rd; minimum for same period, 65° on the 9th. Precipitation 0.15 of an inch in two showers.

Woodward Field Station, Woodward (Wheat Improvement, Edmund Stephens)

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston)

Fort Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson)

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, N. E. Jodon)
[Aug. 15]

Yields of winter-wheat varieties grown at North Platte, Nebr., 1930. The yields are averages of four plots, two on summer fallow and two on corn ground.

Variety	C, I. No	Station No.	Bu. per Acre
Tenmarq	6936		65.8
Early Blackhull	S\$56		46.8
Nebraska No. 50	283 <u>5</u>	Nebr. No. 50	45.9
Kanred	5146		, 45 . S
Superhard	8054		45.6
Kanmarq	6937		45.5
Marquis x Kanred	10009	Kans. No. 449	45.0
Minturki	61.55		14.5
Nebraska No. 60	6250		<u>jiji" ji</u>
Turkey (Local)			43.9
Kanred x Minturki	10011	North Platte No. 13	43.5
Beloglina Sel.	83871	" " 170. 11	43.4
Mont. No. 36	5549	Mont. No. 36	43.4
Marquis x Kanred	10008	Kans. No. 441	43.3
Newturk	6935		43.3
Beloglina Sel.	10010	North Platte No. 12	43.1
Kharkof	1442		42.4
Blackhull	6251	37 3 37 70	42.0
Nebraska No. 30	7353	Nebr. No. 30	42.0
She rman	77430	27-2 27 (41.8 41.7
Nebraska No. 6	6249	Hepr. No. 6	41.4
Fulhard	8257 8220	ĺ	40.9
Oro	1543		40.3
Beloglina Kanred x Minturki		North Platte No. 13	40.2
	10011		39.6
Be oglina Sel. Kharkof (Hays No. 2)	6636	Worth Platte No. 15	39.6 38.6
Karmont	6700		35.5

SOUTH DAKOTA

U. S. Cereal Field Experiments, Redfield (Wheat Improvement, E. S. McFadden)

NORTH DAKOTA

Morthern Great Plains Field Station, Mandan (Cereal Agronomy, V. C. Hubbard)

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.)

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith)
(Aug. 16)

The weather has continued hot and dry during most of the month up to date. The total precipitation for July was only 0.08 of an inch, the lowest record for July at the Substation. The precipitation for August to date has been but 0.09 of an inch, recorded August 6.

Threshing has therefore progressed without interruption from wet weather. The threshing of varietal plots at the Substation is practically completed except for late flax and proso varieties. The threshing of the rotations is nearly completed.

Yields have not yet been computed, except for winter-wheat varieties and will be reported later. The highest yielding winter wheat was C. I. 8033, yielding 15.2 bushels, when sown in grain stubble. The higher yielding spring wheats yielded only slightly more, being sown on disked corn land.

Recent official visitors at the Substation were Messrs. J. A. Clark, K. S. Quisenberry, T. R. Stanton, F. A. Coffman, and R. W. Leukel. Mr. F. D. Richey is here today.

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Langdon Substation, Langdon (Wheat Improvement, G. S. Smith) (Aug. 15)

Precipitation in the past four weeks has been very scarce. However, sufficient moisture had fallen earlier in the season so that the crop which is maturing in the immediate locality probably is better than the average here. Harvesting of wheat is well along. No threshing has been done except on the Substation where some peas and oats have been run through.

The wheat nursery will be fully ripe in two or three days. The first nursery harvesting was done today. The wheat varieties will all be ready for cutting tomorrow, August 16.

Notes on lodging, rust, height, and ripening have been taken during the past week. No severe lodging occurred in the nursery, but the heads were heavy enough to indicate very clearly differences in strength of straw. Lodging is important in durum-wheat improvement as evidenced by the fact that many farmers have given up growing durum on that account.

Some very interesting rust notes were obtained this season. A very severe natural epidemic occurred, being rapidly helped along by the numerous susceptible varieties grown in the nursery. Infection ranged from 0 to 90 per cent, and damage to some varieties was such as to prevent any setting of seed.

Official visitors during the past month have included Messrs. H. B. Humphrey, K. S. Quisenberry, H. L. Walster, H. G. Ukkelburg, C. O. Johnston, J. A. Clark, V. C. Hubbard, R. H. Bamberg, A. C. Dillman, and T. R. Stanton.

MONTANA

Judith Basin Branch Station, Moccasin (Cereal Agronomy, B. B. Bayles)

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, L. L. Davis)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines) (W. K. Smith)

Agricultural Experiment Station, Pullman (Stinking Smuts of Wheat, H. H. Flor)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)
(Aug. 8)

The month of July was normally dry--no precipitation--but somewhat cooler than normal. There were only nine days when maximum temperatures were above 90, the highest being 99 degrees on the 12th. The past five days have been rather warm, the maximum temperature varying from 92 to 98 degrees.

Harvesting of winter wheat in the Columbia Basin of Oregon has been in progress for more than two weeks. In the vicinity of Moro winter-wheat yields were a little higher than the farmers expected, ranging from 16 to 25 bushels per acre. Spring-wheat yields are equally as good and in many cases better than those of winter wheat. On the Station spring wheat out-yielded winter wheat, and spring barley gave higher yields than either spring or winter wheat. The field plots have been threshed and the threshing of the nursery will be finished tomorrow.

The total precipitation for the crop year, August 1, 1929, to July 31, 1930, at Moro was only 7.81 inches, with 1.32 inches for the four months of the growing season, March to July, inclusive.

The following tables give the yields obtained this year in the varietal trials of winter wheat and spring wheat. Winterkilling was an important factor this crop year in reducing yields of the less hardy winter wheat. varieties. Most of the Crimean or Turkey group yielded about the same, except a black-awned Turkey selection obtained from 5 field at North Powder, Oreg., which ranked second in yield, and Kanred which yielded considerably less than the other Turkey varieties.

Yield of winter-wheat varieties grown in quadruplicate one-twentiethacre plots at the Sherman County Branch Station, Moro, Oreg., 1930.

Variety	C. I.No.	: Acre yield in bushels :		Av.		
	•	Ser. 1	Ser. 2	Ser. 3	Ser. 4	
					: 15.8 :	
· ·	: <u>-</u>	: 17.5	: 20.0	16.2	: 19.2 :	18.2
Hybrid 128 x Fortyfold 1997A-4-3-2		16.2	: 23.3	: : 13.3	: 19.6 :	13.2
					: 17.9 :	
Local Turkey	: 4429				: 17.9 :	16.6
					: 17.5 :	
					: 17.9 :	
	1569-2				: 17.1 :	
Kharkof					: 19.2 :	
Kanred x Marquis (Ks. 214214):					: 17.1 :	
					: 16.2:	
					: 16.7:	
					: 15.4:	
•			_	_	: 12.5 :	
Kanred White Odessa x Hard Federa-	5146	14.6	17.5	10.0	: 16.2 :	14.6
		11.3	10.8	15.4	14.6:	13.0
Arcadian x Hard Federation		11.0	:	100	: ::	10.0
		6.3	12.5	13.3	: 13.3 :	11.4
Fortyfold x Hard Federation :			:		: :	
, , , , , , , , , , , , , , , , , , ,	! ;				: 10.4:	
Federation					: 10.6 :	
Arcc	8246	10.0	5.8	10.8	7.9:	9.4

Yield of spring-wheat varieties grown in quadruplicate one-twentiethacre plots at the Sherman County Branch Station, Moro, Oreg., 1930.

	·	
7	: : : : : : : : : : : : : : : : : : :	Av•
Variety		
	: :Ser. 1:Ser. 2:Ser. 3:Ser. 4:	
	<u> </u>	
Onas	: 6221 : 23.2 : 25.1 : 22.7 : 24.0 :	25.0
Baart x Federation	: S254 : 26.7 : 24.7 : 22.3 : 23.3 :	24.3
Baart x Federation	: S252 : 27.3 : 24.3 : 21.7 : 22.7 :	24.0
rederation		24.0
White Federation		22.8
lard Federation Sel. 71		22.6
lard Federation		22.6
lard Federation Sel. 31		22.6
lard Federation Sel. 82		21.9
Baart		21.6
lard Federation Sel. 79		21.3
Pacific Bluestem	: 4067 : 21.7 : 20.4 : 20.3 : 20.7 :	20.8
l <mark>arquis de la composición dela composición de la composición de la composición dela composición del composición dela composición de la composición del composición del composición dela composición del composición dela composición dela composición del composición del composición del</mark>	: 4158 : 19.9 : 18.2 : 17.0 : 19.7 :	13.7
• •		

Agricultural Experiment Station, Corvallis (Foot Rots of Wheat, Roderick Sprague)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)

University Farm, Davis (Cereal Agronomy, G. A. Wiebe)



CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases
Bureau of Plant Industry, U. S. Department of Agriculture
(NOT FOR PUBLICATION)

Vol. 22

August 31, 1930
Personnel (Aug. 21-31) and General Issue

No. 21

PERSONNEL ITEMS

- Mr. B. B. Bayles, assistant agronomist in charge of the cooperative certal-agronomy experiments at the Judith Basin Substation, Moccasin, Mont., who came to Washington on August 18 for Office conferences, left on August 23 for Oregon, Washington, Idaho, California, Arizona, and Utah to confer with officials of agricultural experiment stations and field employees of the Office and to look over cooperative cereal experiments. On the completion of this work Mr. Bayles will return to his headquarters at Moccasin, Mont.
- Mr. A. C. Dillman, associate agronomist in charge of flax investigations, returned to Washington on August 21 from an extended trip in the flaxseed-producing States.
- Dr. H. V. Harlan, principal agronomist in charge of barley investigations, returned to Washington on August 16 from an extended trip in the interests of barley investigations.
- Mr. R. W. Leukel, associate pathologist, who left Washington on July 7 for points in Wisconsin, Minnesota, North and South Dakota, Montana, Idaho, and Utah, to study cooperative cereal-smut nurseries, returned to his head-quarters on August 15. Mr. Leukel also visited the Kansas Agricultural Experiment Station, Manhattan, and the Ft. Hays Branch Station, Hays, to confer with Station officials regarding diseases of grain sorghums.

The date of Mr. Leukel's return from points in the southern States was stated by mistake as August 16 in the Cereal Courier of August 20. The date of his return was June 13.

Dr. K. S. Quisenberry, associate agronomist in western wheat investigations, left Washington on August 31 for a 10-day trip in Kansas, Colorado, Oklahoma, and Texas to confer with officials of agricultural experiment stations and field employees of the Office regarding plans for future cooperative wheat investigations and to supervise the seeding of winter wheat.

Mr. T. R. Stanton, senior agronomist in charge of oat investigations, who last reported from Iowa, returned to Washington on August 24. Mr. Stanton spent the period from July 11 to 22 on the Agronomy Farm at Ames, assisting in recording data and harvesting the cooperative oat nursery. From Iowa he proceeded to Aberdeen, Idaho, making stops at St. Paul and Crookston, Minn., Langdon and Dickinson, N. Dak., and Bozeman, Mont., arriving at Aberdeen on August 2.

Some excellent fields of Anthony oats were seen in the vicinity of Crookston. The varieties and strains of oats in both plots and nursery rows on the station at Crookston also were in good condition. At the Langdon Substation the smut-resistent oat strains from crosses on Markton were just fully headed and looked promising. In western North Dakota, in the vicinity of Dickinson, oats and other crops had suffered from the hot, dry weather. The early varieties and strains of oats on the Substation had been injured the least and will produce the highest yields this year.

At Bozeman as usual the small grains were in excellent condition. Some of the smut-resistant selections from hybrids on Markton appeared especially promising. While at Bozeman Mr. Stanton attended some of the sessions of the Western Section of the American Society of Agronomy. On the whole a very interesting and profitable meeting was held. There was a good attendance of western agronomists, and many excellent papers were presented on various agronomic subjects. The sessions were augmented by two short addresses by Director F. B. Linfield of the Montana Agricultural Experiment Station on the duties and ideals of agronomists, especially young agronomists, which were both helpful and inspiring.

For the first time in Mr. Stanton's experience rains interfered with the narvesting of oats at Aberdeen. During the days from August 9 to 14, field work was delayed and ripened oats were discolored by the constant showers. In all nearly two inches of rain fell, seriously damaging much alfalfa hay and causing wheat to sprout in the snock on surrounding farms. Some of the most promising experimental oat material consisted of head-row progenies from smut-resistant hybrid populations. Many of these showed the excellent kernel characters of Silvermine and Idamine and were entirely free from smut, the seed being artificially inoculated. A dworf sterile fatuoid also was found in a head row of an unnamed sort of the Silvermine type.

From Aberdeen Mr. Stanton returned to Washington, stopping at Ames and Cedar Rapids, Iowa. In Nebraska along the route of the Union Pacific corn had not been injured severely by drought, and a better crop than was expected will be harvested. In central Iowa corn has been damaged at least 50 per cent by the continuous dry weather. In both western and eastern Iowa corn is in better condition. In northern Indiana and Ohio the effects of the drought were most apparent in the burned pastures. Corn appeared to be in fair condition. The worst effects of the drought were noted in West Virginia and Maryland, where corn was completely dried up, and gaunt, poorly nourished cattle were seen trying to forage on the burned pastures and stubble fields.

MANUSCRIPTS AND PUBLICATIONS

- 58 A brief manuscript entitled "Heterothallism in <u>Puccinia coronata</u>," by <u>Ruth F. Allen</u>, was approved on August 21 for submittal to Science.
- 59 A manuscript entitled "Some Questions and Answers on Cold Injury to Corn," by J. R. Holbert and W. L. Burlison, was approved on August 27 for submittal to the Annual Report of the Illinois State Farmers' Institute.

Galley proof of Technical Bulletin 207 entitled "Seed Treatment for Controlling Covered Smut of Barley," by R. W. Leukel, was read on August 28.

The Manual of Bacterial Plant Pathogens, by Charlotte Elliott, published by The Williams and Wilkins Company, Baltimore, Md., is off the press. It presents in alphabetical order causal organisms, description, synonymy, symptoms, host, distribution and literature. ix + 360 pages. 1930.



CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22 September 10, 1930 No. 22
Personnel (Sept. 1-10) and Field Station (Aug. 16-30) Issue

PERSONNEL ITEMS

Mr. J. 1. Clark, Senior Agronomist is Charge of western wheat investigations, returned to Washington on September 6, after spending nearly four months in the field. During this time he visited 48 experiment stations. The latter part of May and June was spent largely in the Southern Great Plains and Pacific Coast regions, where enlarged wheat improvement programs were planned.

Mr. Clark devoted the latter part of the summer to an inspection of the cooperative hard spring wheat breeding and testing experiments conducted in the northern spring wheat region, at the following stations:

St. Paul, Waseca, Morris, and Crookston, Manne; Fargo, Edgeley, Langdon, Mandan, Dickinson, Hettinger, and Willistor. N. Dake; Bozeman, Moccasin, Havre, and Huntley, Monte; and Sheridan and Archer, Wyo. By using a Government-owned car Mr. Clark was able to visit all but one of these stations. Some of the stations were visited two or three times. Temporary headquarters were at Fargo, N. Dake

Mr. Clark also visited the Manitoba Agricultural College at Winnipeg, to see the field rust breeding work conducted by the Dominion Rust Research Laboratory at that place.

Considerable time was spent by Mr. Clark at the Northern Great Plains Field Station, Mandan, and the Langdon Substation, Langdon, N. Dak., in making studies of the inheritance of stem rust reaction in certain hard spring and durum wheat crosses.

Mr. F. A. Coffman, associate agronomist in oat investigations, returned to Washington on September 1, having been in the field since June 29. From June 29 to July 25 Mr. Coffman visited experiment stations in the central West. Most of the time was spent at Ames, Iowa, studying economic oat hybrids in the cooperative nurseries. A number of the hybrid selection give evidence of being resistant to both rust and smut.

Most of Mr. Coffman's time from July 25 to August 23 was spent in the northern Great Plains and at Aberdeen, Idaho, studying and harvesting cooperative oat breeding nurseries and obtaining genetic data on hybrid generations of oats.

- Mr. John J. Curtis was appointed junior agrenomist, effective September 1, in connection with the cooperative work with wheat and other small grains at the United States Dry-Land Field Station, Akron, Colo.
- Mr. V. H. Florell, associate agronomist, was transferred from Washington. D. C., to Moscow, Idaho, to have charge of the experiments in the production and improvement of wheat and other cereals to be conducted in ecoperation with the Idaho Agricultural Experiment Station.

 Mr. Florell began his duties at Moscow on September 1.
- Mr. Robert Hunter was appointed agent, effective September 1, to assist in the cooperative cereal investigations and experiments conducted at the Fort Hays Branch Experiment Station, Hays, Kans., under the supervision of Mr. A. F. Swanson.
- Mr. M. A. McCall, principal Agronomist in charge, returned to Washington on September 9 from a week's trip in Kansas, Minnesota, Illinois, and Indiana.
- Dr. H. C. Murphy, assistant pathologist, was married on August 16 to Miss Greta M. Hanmer, of Ames, Iowa. Dr. and Mrs. Murphy visited Washington on September 3 on their way to visit Canada, the bride's former home. Dr. and Mrs. Murphy will be at home after September 25 at 209 Welch Avenue, Ames, Iowa.
- Mr. F. D. Richey, senior agronomist in charge of corn investigations, returned to Washington on September 5 from a four weeks trip in the corngrowing States.

Mr. Philip Talbott was appointed senior laboratory aid (baking), effective September 2. Mr. Talbott will prepare and bake bread under the general supervision of Mr. C. C. Fifield, associate baking technologist, in the milling and baking investigations that are being conducted in cooperation with the Bureau of Agricultural Economics.

MANUSCRIPTS AND PUBLICATIONS

The article entitled "Relation between the Vigor of the Corn Plant and Its Succeptibility to Smut (<u>Ustilago zeae</u>)," by <u>C. H. Kyle</u>, appears in the Journal of Agricultural Research 41(3): 221-231. August 1, 1930.

The paper entitled "Maize Breeding," by F. D. Richey, appears in Documentary Material on the Inter-American Conference on Agriculture, Forestry, and Animal Industry, September 8 to 20, 1930, p. 231-235. [September, 1930]

The paper entitled "Diseases of Cereal Crops in Pan America," by H. B. Humphyey, appears in Documentary Material on the Inter-American Conference on Agricultume, Forestry and Animal Industry, September 8 to 20, 1930, p. 237-242. [September, 1930.]

WESTERN SECTION OF THE AMERICAN SOCIETY OF AGROPOMY, 1930

The following members of the Washington and field staffs of the Office of Cereal Crops and Diseases were in attendance at the meetings of the Western Section of the American Society of Agronomy at Bozeman, Mont., from July 30 to August 1: B. B. Bayles, J. C. Brinsmade, Jr., J. A. Clora F. A. Coffman, L. L. Davis, A. C. Dillman, K. S. Quisenberry, G. S. Smith, R. W. Smith, T. R. Stanton, D. E. Stephens, and G. A. Wiebe.

About 40 agronomists from different States of the West also were in attendance at the sessions.

The first day was devoted to a discussion on weed control. On the morning of the second day there were papers and a general discussion on genetics and plant improvement, with special reference to cereals. In the afternoon of the second day there was a general discussion on dryland agriculture, crop rotation, and forage problems. In the morning of the third day a tour was made of the Agronomy Farm of the Montana Agricultural Experiment Station to look over the crops.

Dr. O. S. Aamodt, formerly with the Office of Cereal Crops and Diseases, but now with the University of Alberta, Edmonton, Alberta, presented a paper entitled "The Relation of New Physical Forms of Stem Rust of Wheat and the Production of Resistant Varieties." After the banquet in the evening of July 31 he also gave a very interesting summary of his visit to experiment stations on the occasion of his recent trip in Europe. Dr. George Stewart of Logan, Utah, retiring president, gave a historical talk on genetics. Other speakers were Director Lindfield of the Montana Agricultural Experiment Station and Dr. K. S. Quisenberry. The following officers were elected for the ensuing year: Dr. Alvin Kezer, Colorado, president; and Mr. A. F. Bracken, Utah, secretary. It was voted to meet in Utah in 1931.

Papers presented or talks given by members of the Office staff were as follows:

"Water Requirement Experiments at Moro, Oregon," by D. E. Stephens, Sherman County Branch Station, Moro, Oregon.

"Cereal Nursery Experiments in the Columbia Basin of Oregon," by D. E. Stephens and J. F. Martin, Sherman County Branch Station, Moro, Oreg. Paper presented by Mr. Stephens.

"Inheritance Studies of Winter Hardiness and Winter-Spring Growth Habit in a Winter x Spring Wheat Cross," by K. S. Quisenberry, Cereal Crops and Diseases, U. S. D. A.

"Inheritance of Smut Reaction Awnedness and Other Characters in Hope Wheat Crosses at Bozeman, Montana," by J. A. Clark and K. S. Quisenberry Office of Cereal Crops and Diseases, and LeRoy Powers, Montana Agricultural Experiment Station. Paper presented by Mr. Clark.

"Some Ways of Stepping up the Breeding Program," by F. A. Coffman.

"The Enlarged Wheat Breeding Program for the Western States," by J. A. Clark.

HARD RED WINTER WHEAT WORKERS MEET

The agronomic workers of the Southern Great Plains area met at the Kansas Agricultural Experiment Station on September 2, 1930, to discuss plans for an enlarged cooperative hard red winter wheat improvement program. There were present representatives from the State agricultural experiment stations of Kansas, Nebraska, Colorado, Oklahoma, and Texas. Those in attendance from the Office of Cereal Crops and Diseases were Mr. M. A. McCall, principal agronomist in charge, Mr. J. Allen Clark, senior agronomist in charge of western wheat investigations, and Dr. K. S. Quisenberry, associate agronomist in western wheat investigations. Of the agronomic field staff there were present Dr. J. H. Parker, of Manhattan, Kans. A. F. Swanson, Ft. Hays Branch Experiment Station, Mr. J. J. Curtis, United States Dry-Land Field Station, Akron, Colo., and Mr. J. B. Sieglinger, Woodward Field Station, Woodward, Okla.

FIELD STATION CONDITION AND PROGRESS

(All experiments except those conducted at the Arlington Experiment Farm, Rosslyn, Va., are in cooperation with State agricultural experiment stations or other agencies.)

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

· State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

ARKANSAS

Agricultural Experiment Station, Fayetteville (Rice Diseases, E. C. Tullis)

MISSOURI

Agricultural Experiment Station, Columbia (Rice Agronomy, B. M. King)

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

CHIO

Agricultural Experiment Station, Wooster (Corn Investigations, G. H. Stringfield)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, H. C. Murphy)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, LaFayette (Corn Rots and Metallic Poisoning, J. F. Trost, Acting in Charge)

Purdve University Agricultural Experiment Station, LaFayette (Leaf Rusts, E. B. Mains)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, R. G. Shands, Acting in Charge)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, E. R. Ausemus)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman) (M. N. Levine)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

TEXAS

Substation No. 6, Denton (Wheat Improvement, I. M. Atkins)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger)

Woodward Field Station, Woodward (Wheat Improvement, Edmund Stephens)

KANSAS

- Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)
- Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)
- Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)
- Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston)
- Fort Hays Branch Experiment Station, Hays (Coreal Agronomy, A. F. Swanson)

COLORADO

United States Dry-Land Field Station, Akron (Wheat Improvement, J. J. Curtis)

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, N. E. Jodon)

Agricultural Experiment Station, Lincoln (Wheat Improvement, C. A. Suneson)

SOUTH DAKOTA

United States Field Station, Redfield (Wheat Improvement, E. S. McFadden)

NORTH DAKOTA

Northern Great Plains Field Station, Mandan (Cereal Agronomy, V. C. Hubbard) (Sept. 2)

Threshing of wheat, oats, and barley in plots and nursery was completed August 25. Wheat both in plots and in the nursery was plumper than was expected. Test weights varied from 52 to 62 pounds per bushel and will average approximately 58 pounds. Yields have not yet been computed.

Notes on stem rust and awn classification were taken on 190 rows of an F₃ Hope x Supreme cross. Rust infection was light and the resistant and susceptible hybrids did not show the extremes that were expected, though some interesting differences were noted.

No rust developed in the uniform oat rust nursery till late and then only a trace on two varieties. A trace was recorded for Sixty-Day, Gopher, Markton, Golden Rain, and Victory in plots and 2 per cent for Swedish Select.

Test weights of oats in plots were high because of the relatively high percentage of kernels that threshed free of hulls.

Barley yields are very low. Reseeded varieties emerged very slowly owing to drought. Wire worms aided in cutting down the stand. Only one series, which was located in a depression, produced yields that came near approaching normal.

Extreme temperatures in August were not so high as those in 1929 though the mean was 6° higher than in 1929 and 2° higher than the 16-year average for the period from 1914 to 1929, inclusive. The maximum and minimum temperatures were 99° on August 6 and 40° on August 31, respectively. The mean temperature was 70°.

The precipitation for August was 2.00 inches, or 0.83 of an inch above the 16-year average. A trace was recorded on four dates, and 1.14 inches on August 19. Rains came too late to be of any benefit to wheat, oats, or barley. Pastures, potatoes, late corn, and flax were benefited where they were not too dried up.

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (Aug. 16)

Generally hot, dry weather has prevailed during the first half of August.

The flax still standing in varietal plots has ripened very rapidly during the past week and probably all will be harvested early next week. Flax sown May 31 in the date-and-rate-of-seeding-and-tillage experiment also is beginning to ripen. Flax sown June 10 is not yet through blooming.

Most of the flax in nursery rows that germinated early is ripe. Flax that germinated late is not yet through blooming.

In the flax-sick soil nursery wilt has continued to take its toll in some standard varieties formerly considered very wilt-resistant. Redwing has succumbed almost completely in some rows. Bison has shown the least disease injury of the varieties in the uniform nursery. In some rows of Bison, however, there are many diseased plants. A few early hybrid strains grown in triplicated rows apparently are disease-free and appear especially promising.

An extremely heavy infection of rust has developed on some varieties from India. Other Indian varieties grown between heavily rusted varieties are practically free from rust, though occasional rust pustules occur on some plants. Some rust may be found on many varieties from other sources but the infection is not nearly so severe as on most of the Indian varieties. Rust was noted Aug. 15 on the native wild <u>Linum lewisii</u>.

A native, yellow-flower species of Linum, first noted in this locality on July 24 when Dr. Humphrey was here, has been tentatively identified by Prof. O. A. Stevens, botanist at the State College, Fargo, N. Dak., as Linum sulcatum.

Mr. A. C. Dillman returned from Bozeman, Mont., on Aug. 6 and left for St. Paul, Minn., Aug. 9.

Official visitors included Messrs. J. A. Clark, F. D. Richey, and Dr. L. W. Boyle.

The maximum temperature was 99° on Aug. 6, the minimum 45° on Aug. 9. The precipitation was 0.21 of an inch.

The remainder of the flax in the varietal plots and that sown May 31 in the date-and-rate-of-seeding-and-tillage experiment were harvested August 27. Flax sown June 10 is ripening and should be ready to harvest within the next few days. Flax in nursery rows is ripening very irregularly but most of it may be harvested soon.

Rust on flax has become general, increasing very much during the last half of August. Susceptible varieties in all nursery rows are consistently infected. The data on relative susceptibility, resistance, and immunity of different varieties should be very reliable.

A hailstorm August 29 did some damage to flax still standing in nursery rows and to flax in the shock from varietal plots.

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith)
(Aug. 30)

All cereal plots have been threshed and the nursery is about half threshed. Threshing of the latter has been suspended for the present until parts for requiring the engine are received. The yields obtained from both plots and nursery were slightly higher than expected, considering the drought and the unusual heat this summer.

The yields obtained from plot varieties of both spring and winter wheat are given below.

Acre yields of spring-wheat varieties grown in quadruplicated 56*h-acre plots on the Dickinson Substation in 1930.

Variety	C. I. No.	Yield (Bu. per acre)
Hard Spring		
Ceres	6900	18.9
Supreme	8026	18.9
Reward	8182	18.6
Hurdsfield (Whiteman)	8379	1,8.3
Marquis-Kota (1656.48)		18.2
do (1656.84)	3004	18.2
Garnet	8181	17.8
Quality	6607	17.6

<u>Variety</u>	C. I. No.	(Bu. Per acre)
Double Cross (Minn. No. 2303) Preston Reliance Sel. 22 Reliance Sel. 16 Marquis-Kota (1656.97) Progress 1/ Marquis-Kota (1656.85) Power Kota Hope Marquis Red Fife Renfrew Lontana King Marquillo Reliance Haynes	10003 3081 8384 8005 6902 8385 3697 5878 8178 3641 3329 8194 8878 6887 7370 2874	17.3 17.0 16.6 16.5 16.2 16.1 16.0 15.7 15.2 14.7 14.6 14.4 14.1 13.9 13.4
Durum Kubanka Pentad Mondak Nodak Akrona Monad Kubanka Sel. 132 Mindum	1 ¹ 4 ¹ 0 3322 7287 6519 6881 3320 8383 5296	19.8 19.4 18.3 17.4 17.1 17.0 16.8 16.4
Acre yields of winter-wheat of plots on the Dickinson Substation Minturki x Beloglina-Buffun Karmont Minhardi x Minturki Beloglina Turkey x Minessa Minturki Kharkof Turkey Kanred x Buffun Buffun No. 17	in 1930	15.2 13.7 13.6 12.9 12.8 11.8 11.7 10.5

Agricultural Experiment Station, State College Station, Fargo (Flax Diseasés, L. W. Boyle)

Langdon Substation, Langdon (Wheat Improvement, G. S. Smith) (Sept. 1)

Favorable weather during the past two weeks has permitted harvesting and threshing to go forward rapidly. Varieties of wheat, oats, barley, and peas have been threshed.

The unofficial yields of the wheats show a high correlation with rust reaction, the immune and resistant varieties all being near the top and the susceptible varieties, carrying increasing percentages of infection, yielding less. The common wheats ranged in yield from 41.5 bushels for Double Cross (Minn. 2303) to 12.7 bushels for Supreme. The durum wheats showed a much narrower variation in yield, ranging from 43.3 bushels for N. D. R. 216 to 38.3 bushels for Kubanka Sel. 132. Hope was the only variety that was rust free, although H-44 had only a trace of rust. Several of the susceptible varieties carried as much as 80 per cent rust.

Mr. J. A. Clark was at the Substation from August 18 to 23. About 400 F₃ rod rows of a triangle cross of the three varieties, Pentad, Nodak, and Akrona, were classified for rust reaction. A very heavy natural stemrust infection varied from a trace to 10 per cent on Pentad, 10, 20, to 30 per cent on Nodak, and 40, 50, 60 to 70 per cent on Akrona. The Pentad x Akrona hybrids ranged from a trace to 70 per cent and the Nodak x Akrona from a trace to 80 per cent. The Pentad x Nodak hybrids had infections within the range of the parents, trace to 30 per cent. There were no rust free plants.

Other visitors at the Substation were Drs. M. N. Levine, L. R. Waldron, and J. B. Harrington.

MONTANA

Judith Basin Branch Station, Moccasin (Cereal Agronomy, B. B. Bayles)

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, L. L. Davis)

Agricultural Experiment Station, Moscow (Wheat Improvement, V. H. Florell)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines) (W. K. Smith)

Agricultural Experiment Station, Pullman (Stinking Smuts of Wheat, H. H. Flor)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)
(Aug. 19)

Data on yields of varieties of spring oats grown at the Sherman County Branch Station in 1930 are presented in Table 1.

The results of a trial at Pendleton, Oreg., of winter-wheat varieties inoculated with smut obtained from different localities are shown in Table 2. These data doubtless will be of interest to pathologists and also to agronomists who are concerned with breeding smut-resistant wheat varieties.

The hottest weather of the year at Moro was recorded during the past two weeks. From August 4 to 15, inclusive, maximum temperatures ranged from 92 to 99 degrees. During the past three days the weather has been much cooler. There was a precipitation of 0.03 of an inch last night (August 18.)

Table 1. Yield of spring-oat varieties grown in quadruplicated 20th-acre plots at Moro, Oreg., in 1930.

Variety	: C. I. :	Acre yield (Bush	els) Av.
vai100y		1:Sel. 2:Sel. 3	
	:	:	: : :
Richland		0:48.1:41.9	
Sixty-Day	: 165-1: 45.	0:45.0:42.5	: 48.8 : 45.3
Markton		9:46.3:45.0	
Swedish Select		4: 45.0: 42.5	
Iogold	: 2329 : 42,	5: 43.1: 43.8	: 43.1 : 43.1
Western Wonder	: 1951 : 35	8:46.3:40.0	: 43.8: 42.2
Three Grain	: 1950 : 41	9: 41.3: 41.9	: 43.1 : 42.1
Siberian	: 635 : 43.	8:41.9:35.1	: 40.6 : 41.1

Table 2. Percentage of bunt on 13 wheat varieties inoculated with smut from 15 different localities and grown at Pendleton, Oreg., in 1930

Variety	: :
	1c*; 1d; 10; 7a; 8b; 9;19c; 19d; 23; 33; 53; 56; 58; 60; 61; Av.
Turkey (Bearded	
Minn. No. 48)	:15.7:11.8:19.9:11.9:15.9:12.3:13.7:10.3: 9.4:15.2:15.4:26.5: 9.2:12.7:15.3:14.0
Oro	: 4.5: 0 : 0.9: 1.7:17.4: 3.5:11.4: 0.7: 0.8: 4.0: 5.3: 1.0: 9.2: 2.6: 0.3: 4.0
Regal	: 94.9; 20.3; 27.2; 52.9; 90.0; 78.8; 96.7; 34.1; 63.6; 65.8; 71.7; 65.0; 36.0; 83.4; 33.3; 64.7
Ridit	:21.6: 0.6: 0.9: 2.5:29.4: 7.5:12.2: 1.5: 0.7:12.8:28.1:17.1:20.9: 9.4: 1.2:10.9
Hussar	:89.1: 9.4:11.3:25.7:80.1:75.0:69.5:16.0: 5.8:48.8:76.2:72.2:16.2:79.1:14.6:48.9
Beardless Rye	: 0.3: 0.3: 0 : 0 : 2.8: 7.1: 3.9: 5.1: 2.7: 1.9: 7.7: 1.6: 0 : 0.4: 0 : 2.4
Hybrid 123	:94.6:95.8:96.4:93.7:83.9:93.1:84.5:92.7:97.5:92.5:92.6:93.6:95.6:99.4:92.8:96.9:93.7
Albit	:95.5:93.2:94.4:38.4:92.1: 3.5:83.3:93.8:96.8:96.4:91.7:93.0:51.6:88.5:81.6:77.7
Hussar Sel. 186	:0
Hussar Sel. 194	: 0 : 0.5; 0 : 1.5: 0.7: 4.3: 2.9: 0 : 3.2: 0 : 0 : 5.0: 2.0: 0 : 1.8: 1.6
Hussar Sel. 195 : 1.7: 0.	: 1.7: 0.4: 0 : 1.9: 0.7: 5.7: 1.7: 0 : 4.3: 4.1: 6.6: 3.2: 2.1: 0 : 1.0: 2.3
** Hoenheimer No. 7	7: 2.6: 0 : 0 : 0 : 0 : 3.1: 5.3: 3.6: 2.2: 0.4: 0 : 1.7: 0 : 0.7: 0 : 1.3
** Hoenheimer	: 2.7: 2.9: 0 : 0.6: 0 : 0.6: 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0.7

* lc, ld, etc., are figures used to identify individual collections ** Smooth chaff

*** Pubescent chaff

Agricultural Experiment Station, Corvallis (Foot Rots of Wheat, Roderick Sprague)

UTAL

Agricultural Experiment Station, Logan (Wheat Improvement, R. W. Woodward)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)

University Farm, Davis (Cereal Agronomy, G. A. Wiebe)



CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22 September 20, 1930 No. 23
Personnel (Sept. 11-20) and Field Station (Sept. 1-15) Issue

PERSONNEL ITEMS

Mr. C. E. Chambliss, associate agronomist in charge of rice investigations, will leave Washington on September 24 for a five-weeks' trip in Texas, Louisiana, Alabama, Georgia, Florida, and South Carolina, to confer with experiment station workers and others in regard to the testing of Patna and other rices during the season of 1930.

Dr. Charlotte Elliott, associate pathologist, left Washington on September 19 for Garden City, Kans., to make field studies of sorghum diseases. Dr. Elliott will be away about two weeks.

- Mr. H. S. Garrison, assistant agronomist in corn investigations, will leave Washington on September 24 on a week's trip to Florence, S. C., for the purpose of harvesting experimental corn plots.
- Dr. A. G. Johnson, principal pathologist in charge of cereal disease investigations, returned to Washington on September 11.
- Dr. E. B. Mains, in charge of the leaf rust subproject and of the leaf rust investigations cooperative with the Purlue University Agricultural Experiment Station, resigned effective September 13 to accept a position with the University of Michigan. Dr. Mains is one of the outstanding investigators of the rust fungi in the United States. He has made notable contributions to the solution of leaf rust problems, and his resignation is a decided loss to the Office and agriculture in general.
- Dr. Ralph M. Caldwell was transferred from the Office of Barberry Eradication to the Office of Cereal Crops and Diseases, effective September 1, to take charge of cooperative investigations of leaf rusts of wheat, barley, rye, corn, and sorghums at the Purdue University Agricultural Experiment Station, LaFayette, Ind. Dr. Caldwell will continue the cooperative program at LaFayette heretofore in charge of Dr. Mains.

- Mr. J. Foster Martin, junior agronomist in charge of the cooperative cereal nursery and breeding experiments at the Sherman County Branch Station, Moro, Oreg., has been granted leave of absence without pay for the period from September 16, 1930, to June 15, 1931, to engage in graduate study at the Kansas State Agricultural College.
- Dr. K. S. Quisenberry, associate agronomist in western wheat investigations, returned to Washington on September 15. He attended the hard red winter wheat conference at Manhattan, Kans., on September 2. He also visited Akron, Colo., Denton, Tex., and Woodward, Okla., at which stations plans were made for starting cooperative work on the improvement of hard red winter wheats.

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VISITORS

Dr. L. R. Jones, head of the department of plant pathology of the Wisconsin State College of Agriculture, was an Office visitor on September 12.

Dr. N. W. Kuleshov, in charge of work with maize in the Institute of Applied Litany, Leningrad, U.S.S.R., was an Office visitor on September 19 and 20. Dr. Kuleshov is traveling in the United States and Canada for the purpose of studying methods in the production and improvement of corn and to a lesser extent of the grain sorghums. He was of great assistance to Dr. J. G. Dickson, of this Office, during the latter's travel and study in Russia. During Dr. Kuleshov's stay in Washington he was assisted by Office personnel in outlining an itinerary and program for his tradel and study in the United States.

Dr. N. I. Vavilov, Director, Institute of Applied Botany, Leningrad, U.S.S.R., was an Office visitor during the period from September 4 to 18.

The following members of the Office staff have been authorized to attend the meeting of the Joint Committee on European Corn Borer at Toledo, Ohio, on September 23:

- J. R. Holbert, senior agronomist, of Bloomington, Ill.
- F. D. Pichey, senior agronomist in charge of corn investigations, of Washington, D. C.
 - G. F. Sprague, assistant agronomist, of Arlington Farm, Va.
 - G. H. Stringfield, agent, of Wooster, Ohio.

The meeting will be followed by an inspection tour of the experimental place and some of the infested area in Ohio, Michigan, and Ontario, on September 24 and 25.

The following members of the Office staff have been authorized to attend the Purnell Corn Improvement Conference at LaFayette, Ind., on September 26:

- J. R. Holbert, senior agronomist, of Bloomington, Ill.
- F. D. Richey, senior agronomist in charge of corn investigations, of Washington, D. C. Mr. Richey is the recording secretary.
- R. R. St. John, associate agronomist, G. M. Smith, assistant pathologist, and J. F. Trost, associate pathologist, of LaFayette, Ind.
 - G. F. Sprague, assistant agronomist of Arlington Farm, Va.
 - L. J. Stadler, agent, of Columbia, Mo.
 - G. H. Stringfield, agent, of Wooster, Ohio,

MANUSCRIPTS AND PUBLICATIONS

62 A manuscript entitled "Hybrid Corn," by A. M. Brunson, was approved September 12 for publication in Capper's Kansas Farmer.

Galley proof of Farmers! Bulletin 1640 entitled "Fall-Sown Oat Production," by T. R. Stanton and F. A. Coffman, was read on September 15.

Galley proof of article entitled "Hybrid Vigor in Oats," by <u>F. A.</u>

<u>Coffman</u> and <u>G. A. Wiebe</u>, for publication in the Journal of the American Society of Agronomy, was read on September 15.

Galley proof of article entitled "The Nature of Smut Resistance in Certain Select Lines of Corn as Indicated by Filtration Studies," by Emery R Ranker, for publication in the Journal of Agricultural Research, was read on September 19. (Dr. Ranker was formerly Associate Physiologist in the Office of Cereal Crops and Diseases.)

The article entitled "An Aberrant Physiologic Form of <u>Puccinia</u> triticina Eriks.", " by <u>C. O. Johnston</u>, appears in Phytopathology 20(3): 609-620, fig. 1. August, 1930. (Cooperative between the Office of Cereal Crops and Diseases and the Kansas Agricultural Experiment Station.)

The article entitled "Infection Phenomera and Host Reactions caused by <u>Tilletia tritici</u> in Susceptible and Nonsusceptible Varieties of Wheat," by <u>H. M. Woolman</u>, appears in Phytopathology 20(8): 637-652, figs. 1-7.

August, 1930. (Cooperative investigations conducted by the Oregon Agricultural Experiment Station and the Office of Cereal Crops and Diseases.)

The article entitled "Inheritance of Immunity from Flax Rust," by A. W. Henry, appears in Phytopathology 20(9): 707-721, figs. 1-2. September, 1930. (Cooperative investigations between the Minnesota Agricultural Experiment Station and the Offices of Cereal Crops and Diseases and Fiber Plants, B. P. I.)

FIELD STATION CONDITION AND PROGRESS

(All experiments except those conducted at the Arlington Experiment Farm, Rosslyn, Va., are in cooperation with State agricultural experiment stations or other agencies.)

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn, (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)(Sept. 13)

From about July 22 to the end of August the drought that has been so serious in other States began to affect sections of New York State. Recently there have been some good rains and conditions are greatly improved for fall seeding.

This year it was decided to sow wheat a little earlier than usual and all seed was sown during the week of September 3. Germination was very good and the wheat is growing nicely.

In some sections of New York State the wheat yields were very good. Cooperators report yields of Honor ranging from 40 to 52 bushels per acre. To date reports show that Honor has out-yielded Forward. As a rule Forward out-yields Honor, but apparently conditions this year have been favorable to Honor.

In the nursery there have been sown a large number of hybrids which are the result of crossing some of the best types with smutresistant types.

Threshing of oats and barley has been completed, but the yields have not yet been calculated.

Visitors to the Department include Dr. N. I. Vavilov of Leningrad, U. S. S. R., Profs. Summerby and Raymond of MacDonald College, Quebec, and Prof. Andrew Boss of St. Paul, Minn.

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)
(Sept. 4)

Weather conditions in August were about normal. The absolute maximum temperature was 96 degrees. The lowest maximum was 77 degrees. A maximum temperature of 90 degrees or above was recorded on 20 days. The absolute minimum was 65 degrees. A total precipitation of 5.33 inches was recorded for the month. The 20-year average precipitation for August is 3.62 inches.

Farmers were busy during the month harvesting and threshing early maturing rices. This portion of the crop would have been in the warehouse before September if threshing operations had not been suspended during the last two days of August on account of heavy rains.

The yields of early rices are fairly good, but prices are very unsatisfactory because of the poor quality of the grain due in part to insufficient curing in the shocks.

The liaf-spot disease, referred to in the report for July, continued to increase on all rices until the latter part of the month when cool weather seemed to check it. All of the lower leaves have been practically killed, and many of the upper ones have been badly damaged. What appears to be a disease has killed or spotted many of the spikelets. This will greatly reduce the yield of the commercial fields of Blue Rose. This variety of rice also is badly diseased on the leaf sheath. This and the other diseases mentioned are causing the plants to die before they are fully matured. In general the condition of Blue Rose rice is not good.

Work on the station is about two weeks in advance of what it usually is at this season of the year. Many of the increase plots of rice have been harvested, and much of the nursery is mature. The rice in some of the increase plots is very poor. This condition may be attributed mainly to the leaf-spot disease that has attacked all varieties to some extent.

Cotton in the cooperative variety and fertilizer tests has matured rapidly. There has been some delay in picking and some damage caused by heavy rains.

On August 1, the County Agent conducted a farm tour of Acadia

Parish. Lunch was served at the station by the Crowley Association of

Commerce. After lunch a program was held and the station plots were inspected

About 85 farmers were present. Addresses were made by Dr. T. W. Atkinson, President of Louisiana State University, Dean C. T. Dowell, and several members of the Extension Division.

Dr. E. C. Tullis of Fayetteville, Ark., arrived on August 13 and spent several days studying rice diseases.

Mr. L. J. Salikorn of Banckok, Siam, was a visitor from August 16 to 22.

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

ARKANSAS

Agricultural Experiment Station, Fayetteville (Rice Diseases, E. C. Tullis)

MISSOURI

Agricultural Experiment Station, Columbia (Rice Agronomy, B. M. King)

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

OHIO

Asricultural Experiment Station, Wooster (Corn Investigations, G. H. Stringfield)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, H. C. Murphy)

ILLINOIS

Funk Pros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Furduc University Agricultural Experiment Station, LaFayette (Corn Rots and Matallic Poisoning, J. F. Trost, Acting in Charge)

Purdue University Agricultural Experiment Station, LaFayette (Leaf Rusts, Ralph M. Caldwell)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, R. G. Shands, Acting in Charge)

MINNESOTA

Asricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, E. R. Ausemus)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman) (M. N. Levine)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

TEXAS

Substation No. 6, Denton (Wheat Improvement, I. M. Atkins)

OKL AHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (Sept. 16)

Several showers fell in the past month. Sorghum crops were improved in agreerance, if not in yield.

Our annual field day was held on September 6. The weather was pleasant. Two large groups inspected the sorghum work and it was noticeable that more interest is being shown in the sorghum experiments than usual. The day was a success, 800 or more visitors having been present.

Dr. J. H. Martin went over the sorghum project during the week of September 7 to 14. Dr. K. S. Quisenberry, of the Office, visited the Station on September 10 and 11, and Messrs. C. B. Cross, and B. F. Kiltz of the Oklahoma Agricultural and Mechanical College were visitors on September 11.

The maximum temperature for the first half of September was 101 degrees on the 13th; minimum for the same period, 61 degrees on the 4th and 13th. The precipitation was 1.03 inches which occurred on four dates.

Moodward Field Station, Woodward (Wheat Improvement, Edmund Stephens) (Sept. 15)

The first seeding of winter wheatsin the combination rate-and-date-of-seeding experiment was made on September 15 in duplicate plots at 2, 4, 6, and 8 peck rates.

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Acricultural Experiment Station, Manhattan (Theat Foot Rots, Hurley Fellows)

Arricultural Experiment Station, Menhattan (Wheat Leaf Rust, C. O. Johnston)

Fort Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson)

COLORADO

United States Dry-Land Field Station, Acron (Theat Improvement, J. J. Curtis)

NEBRASKA

Forth Flatte Substition, North Platte (Cereal Agronomy, N. E. Jodon) (Sept. 15)

Winter wheat varieties were seeded during the week of September 15. Twenty-cight varieties were included, two of which had not been grown here previously. The ground is in excellent condition. There have been several showers this month, but more rain would be beneficial.

The winter wheat nursery will include 1100 rod rows, 200 head rows, and about 150 eight-foot rows from an Figeneration of a Tenmarq x Minturki cross. The latter two groups are from Manhattan.

About 1600 rows will be grown in the irrigated smut nursery. This includes all varieties and selections that occur in the yield tests, some wheat-rye backcross selections, H-44 x Minnardi F4 plant selections, and material for a study of the inheritance of bunt resistance.

The sorghum varieties make a fine appearance at the present time and will probably mature in good condition.

Acricultural Experiment Station, Lincoln (Theat Improvement, C. A. Suneson)

SOUTH DAKOTA

United States Field Station, Redfield (Theat Improvement, E. S. McFadden)

NORTH DAKOTA

Northern Great Plains Field Station, Mandan (Cereal Agronomy, V. C. Hubbard)

Average yields obtained from wheat varieties grown in 50th-acre plots replicated three times at Mandan, N. Dak., in 1930.

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<u>Variety</u>	C. I. No.	Yield
The state of the s		(Bu. per acre)
Reliance Sal. No. 22	8334	14.1
Kota	5878	14.0
Marquis x Esta 1656.48	10014	13.9
Ceres .	6900	13.0
H-44	8177	12.1
Reliance Sel. No. 16	911	12.0
Double Cross Minnesota No. 2305	10005	11.4
Reliance	7370	11.2
Supreme	g026	11.1
Double Cross Minnesota No. 2303	10003	11.0
Reward	8182	10.0
	3641	9.5
Marquis	8178	9.5
Hope	8385	9.3
Marquis x Kota 1656.85*		8.6
Marquillo	6887	8.0
Durums		
		(
Kubanka Sel. No. 132	3383	13.6
Monad	3320	12.8
Nodak	6519	12.7
Kubanka	1440	12.2
Mindum	5296	11.1
Mondak	7237 -	11.0

^{*}Average of two plots.

Average yields of oat varieties grown in 50th-acre plots replicated three times at Mandan, N. Dak., in 1930.

<u>Variety</u>	C. I. No.	Stand (estimated) percentage	Yield (Bu. per acre)
Markton Victory Swedish Select Anthony Iogold Golden Rain Edkin Green Russian Sel. Gophar Green Rassian Sel. Rainbow Sixty-Day	2053 550 134 2143 2329 493 2330 2343 2027 2344 2345 165	67 75 60 63 60 62 90 53 65 50 83	25.7 19.7 18.5 16.4 15.4 14.3 14.1 12.5 12.1 11.8 9.2 6.1

Average yields of barley varieties grown in 50th-acre plots replicated three times at Mandan, N. Dak., in 1930.

<u>Variety</u>	C. I. No.	Stand (estimated) percentage	Yield (Bu. per acre)
Glabron Trebi Featherston Odessa Vaughn Alpha Horn	4577 936 1120 182 1367 959 926	50 70 73 80 63 70	13.0 12.0 11.9 11.6 7.5 6.1
Hannohen Composite Sample*	531 	67 60	1.2

^{*}A single guard plot

The stand of all varieties necessitated reseeding. Lack of moisture and wire worms resulted in poor germination and thin final stands.

The winter wheat nursery at Mandan, consisting of 90 rows of the uniform winter-hardiness nursery and 162 rows of 8-foot material, was sown on September 11. The ground was in very good condition. A 1.35 inch rain fell during the evening of the same day. First emergence occurred on September 18.

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (Sept. 17)

Almost continuous wet weather during the first half of September seriously interfered with field work. Some precipitation was recorded on September 4 and each day from September 6 to 13, inclusive. A rainfall of 1.25 inches was recorded on September 11. The total rainfall during the first half of September was 2.17 inches which was nearly an inch more than the average total September rainfall for the past 55 years. The maximum temperature was 89 degrees on September 10; the minimum was 39 degrees on September 2.

The flax varietal and date-and-rate-of-seeding-and-tillage plots were threshed on September 16 and 17. The straw and bolls were dry enough for latisfactory threshing. Many seeds were split in half in threshing, separently because they were tender on account of excessive moisture content of the seed.

Rust infection on flax has increased in prevalence and severity in field Q. Rust was found on all plants of Redwing, Winona, Linota, N. D. R. 114. Buda, and Bison in the uniform rust nursery. Rust severity in rows of Redwing, Winona, Linota, and N. D. R. 114 ranged from 60 to 80 per cent. Severity in rows of Buda was noted as 15 per cent, and in rows of Bison as 10 per cent. Several promising new wilt-resistant strains were noted as rust free.

Inoculation with severely infected material from field Q was effective in producing rust infection on flax in field H, where no rust was noted in August. Infection was severe wherever infected material was left in contact with susceptible green plants. Only occasional gustules were noted on parts of susceptible plants not in direct contact with infected material.

Harvesting of nursery rows in field Q was practically completed on September 13. Most of the rows in the flax-sick soil nursery, where germination was delayed, are still too green to harvest.

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (Sept. 15)

Several light rains have occurred so far this month, totaling about 1.50 inches, which is slightly more than the normal rainfall for the entire month of September. Previous to September the last rain of importance occurred on June 23. While the rains delayed threshing operations, the resulting moisture will aid fall plowing and insure the uniform germination of fall grain already sown or to be sown in the near future.

Threshing at the substation is practically completed for the season except for monut two days work on threshing nursery material. Varieties of winter wheat and rye have been drilled in grain stubble and the winter nursery is partly sown. Threshing in the community is about completed, and some winter rye is being sown.

The coun varieties were husked last week. The ears resulting from crosses and selfs in the nursery were harvested earlier in the month. Corn is more mature than usual at this time of year, all varieties being ripe enough for seed except the latest_maturing sorts.

To date the only frost occurred on September 1, with a minimum temperature of 32 degrees at the Substation. Frost injury was confined to low-lying fields of corn and tender garden crops.

Below are given the acre yields obtained from the replicated plots of pats, earer, and barley.

Acre yields of oats, emmer, and barley varieties grown in replicated plots on the Dickinson Substation in 1930

Oats in quadruplicated 56th-acre plots

<u>Varie ty</u>	<u>C. I. No</u> .	Yield (Bu. per acre)
Iogold	. 2329	45.4
Markton	2053	41.2
Gopher	2027	40.7
Richland	737	40.3
Wayne	2567	40.3
Lincoln	73 3	33.3
Rainbow	2345	33.2
Edkin	2330	37.4
Anthony	2143	36.3
Kherson	459	35.4
Green Russian Sel.	5 <u>3</u> 44	35.4
Silvermine	659	34.9
Swedish Select	134	34.7
Golden Rain	493	33.3
Big Four	653	32.8
Victory	560	.31.3
Green Russian Sel.	2343	30.5
Liberty Hull-less	345	29.4 1
Banner Selection	1997	29.3
Twentieth Century	2643	26.3
Thite Russian	551	26.1

Emmer in quadruplicated plots

<u>Veriety</u>	<u>C.</u>	I. No.	(Bu	Yield 1. per a	cre)
Yaroslav	. 1	1526	1	32.0 <u>1</u> /	/
·	Barley in tripl	licated plots			
Glabron Lion Manchuria Odessa Horn Stellarm Nopal (Hull-less) Velvet Svansota Hanna Trebi Charlottetown 30 Hannchen White Smyrna Scholeys Gold Svanhals)]	+577 923 244 132 926 907 262 +252 1907 203 936 2732 531 553 952 1145 137		36.3 35.8 33.5 31.6 31.1 30.8 30.1 29.1 28.2 26.5 25.3 22.7 19.7	/

2/. Computed at 32 pounds per bushel as with other oat varieties 2/. Computed at 45 pounds per bushel as with other barley varieties

Acricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Langdon Substation, Langdon (Wheat Improvement, G. S. Smith) (Sept. 15)

Light showers for the past four days have interrupted nursery threshing. However, precivitation was badly needed at this time to put the soil in condition for fall plowing. The uniform winter-hardiness nursery has just been seeded.

The first frosts of the season were recorded on September 3 and 5, with temperatures of 31 degrees on 29 degrees, respectively.

Exceptionally good corn was produced on the Station this year, a field of fodder corn being nine feet tall and sufficiently matured as to make excellent silage.

The wheat varieties have been cleaned and are listed below with their test weight, yield, and percentage of stem rust infection. Some interesting comparisons are evident from a study of the table. For instance, although Reward carrief as much rust as Marquis, it weighed 7-1/2 bounds more per bushel. However, it did not yield much more than Marquis. Hope weighed less per bushel than H-44. Throughout the common wheats there was a marked negative correlation of test weight and yield with stem must infection. In the durums little of significance can be determined from the test weights, except that the varieties most susceptible to rust, Abrona and K-75, were the lowest in test weight. The high test weight of Mindum, 63 pounds, seems to bear out the superiority, from a quality standpoint, accredited to this variety.

Acre fields, test weight, and percentage of stem rust of spring wheat or it was grown in triplicated 60th-acre plots at the Langdon Substation, in 1930

Common Wheats	C. I. No.	<u>Yield</u>	<u>Test</u> Seight	Stem Rust (percentage)
Double Cross (Ninr. No. 2303) Marquis-Kota (1656.43) Double Cross (Minn. No. 2305) Hope H-44 Marquis-Kota (1656.35) Marquillo Marquis-Kota (1656.34) Ceres Kota Reward Quality Axminster Marquis Montana King Reliance Garnet Subreme	10003 10014 10005 3173 3177 3335 6337 3004 6900 5373 3132 6607 8195 3641 3373 7370 3131 3026	41.5 40.0 39.3 39.3 38.5 34.5 32.5 32.5 23.5 20.7 19.3 15.7	60.5 59.5 59.5 50.5 60.5 59.5	10 30 25 0 1 30 10 35 40 25 70 65 75 75
Durum Theats				
N. D. R. 216 Kubanka No. 75 Nodak Monad Mindum Akrona Kubanka Kubanka Sel. 132	6519 3320 5296 6331 1440 3333	43.3 41.7 40.7 40.5 40.3 40.0 39.2 38.3	61.5 61.0 61.5 62.0 63.0 61.0 62.0	5 30 1 T 20 35 20 10

MONTANA

Judith Basin Franch Station, Moccasin (Cereal Laronomy, B. B. Bayles)

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdsen Substation, Aberdeen (Cereal Agronomy, L. L. Davis)

Agricultural Experiment Station, Moscow (Theat Improvement, V. H. Florell)

Acricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines) (W. K. Smith)

Arricultural Experiment Station, Pullman (Stinking Smuts of Wheat, H. H. Flor)

OTEGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

Agricultural Experiment Station, Corvallis (Foot Rots of Theat, Roderick Sprague)

- UTAH

Acricultural Experiment Station, Logan (Wheat Improvement, R. W. Woodward)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones) (Sept. 7)

The weather in August was favorable for the development of the rice crop. At the Station the earliest varieties in the nursery and in plots are nearly ripe, the early varieties are ripening, and the midseason varieties are well turned down and starting to ripen. Station yields probably will be higher than expected earlier in the season.

A few commercial fields sown to early rice have been harvested and one or two small fields have been threshed. In general it is thought the average yield for the State will not be so high this year as it was last year. The harvest will be nearly as early as last year, if favorable weather continues.

Static. visitors in August included Dr. J. H. Martin, Prof. G. W. Hendry, Prof. B. A. Madson, Dr. F. N. Briggs, and Mr. L. L. Davis.

University Farm, Davis (Gereal Aronomy, G. A. Wiebe)





CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22

September 30, 1930
Personnel (Sept. 21-30) and General Issue

No. 24

PERSONNEL ITEMS

Mr. H. McKinney, senior pathologist in charge of cereal-virus-disease investigations, is at Granite City, Ill., in connection with wheat mosaic field experiments. He will confer with office personnel and with officials of the agricultural experiment stations of Illinois, Nebraska, and Kansas, regarding cooperative investigations. Mr. McKinney will return to Washington early in October.

Dr. E. C. Stakman, agent in the cereal-disease investigations conducted in cooperation with the Minnesota Agricultural Experiment Station, returned to St. Paul on September 4 from Liberia, where he had been since June, 1930, in the interests of the Firestone Rubber Company.

With the approval of Dr. W. A. Taylor, Chief of the Bureau, and Dr. A. F. Woods, Director of Scientific Work in the Department, the rice program of the Office has been reorganized along lines suggested by Mr. C. E. Chambliss, formerly in charge of the rice project. Rice research is now conducted under two projects, Rice Technology, under the leadership of Mr. Chambliss, and Rice Production and Improvement, under the leadership of Mr. Jenkin W. Jones, now in charge of the Biggs Rice Field Station, Biggs, Calif. The activities of the first named project are concerned with a study of factors affecting the quality and cooking value of rice, factors affecting utilization, and special botanical studies. The activities of the second named project are concerned with the problems indicated by the project name and rice problems in general. It is intended to transfer Mr. Jones to Washington headquarters.

· VISITORS

Mr. G. S. Kulkarni, Special Cotton Mycologist, Cotton Research Laboratory, Dharwar Farm, Dharwar, India, was an Office visitor September 22 to 24, inclusive. He will visit various Southern States, conducting research on cotton diseases, and will then proceed to Madison, Wis., where he will conduct special researches on cotton wilt at the University of Wisconsin until early in January, at which time he will return to India.

Mr. Modesto Martinez, of the Costa Rican Legation, 1838 Connecticut Ave., Washington, D. C., visited the Office on September 30 to obtain information on rice culture.

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MANUSCRIPTS AND PUBLICATIONS

63 An article entitled "Flaxseed Production in Kansas," by A. C. Dillman, was approved on September 30 for publication in the Yearbook of the Kansas State Board of Agriculture.

Galley proof of the article entitled "Heterothallism in <u>Puccinia</u> coronata," by <u>Ruth F. Allen</u>, for publication in Science, was read on September 25.

Galley proof of the article entitled "Influence of Hulling the Caryopsis on Covered-Smut Infection and Related Phenomena in Oats," by T. R. Stanton, F. A. Coffman, V.-F. Tapke; G. A. Wiebe, R. W. Smith, and B. B. Bayles, for publication in the Journal of Agricultural Research, was read on September 30.

Page proof of Farmers' Bulletin 1640 entitled "Fall-Sown Oat Production," by T. R. Stanton and F. A. Coffman, was read on September 30.

ADMINISTRATIVE NOTES

Letters of Authority

When contemplating travel or other expenditures, consult your letter of authority. Request necessary additional authority as far in advance of the date needed as possible. Authority can not be antedated. Your request should contain all necessary details, including (1) approximate date travel is to begin and end (it can begin on or after effective date shown, but not before); (2) purpose of travel (briefly); (3) points to be visited; and (4) special authority needed, such as leave while traveling or use of personally-owned automobile with full information and reasons for such authority or other special requirements.



CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22 October 10, 1930 No. 25
Personnel (Oct. 1-10) and Field Station (Sept. 16-30) Issue

PERSONNEL ITEMS

Dr. Allan D. Dickson, agent in the cooperative barley-scab investigations that are being conducted at Madison, Wis., will come to Washington about October 15 to confer with Department officials and to conduct special physiological researches. Dr. Dickson will be in Washington about 90 days.

Dr. Harold H. Flor, agent in the cereal-smut investigations conducted in cooperation with the Washington Agricultural Experiment Station at Pullman, Wash., will come to Washington on October 15 to confer with Department officials on problems relating to his project and to conduct special research at the Arlington Farm greenhouses. He will stop en route at St. Paul, Minn., to confer with Department and State Station officials there on wheat smut research. Dr. Flor will be in Washington about six months.

Mr. C. O. Johnston, assistant pathologist in the leaf-rust investigations that are being conducted at Manhattan, Kans., in cooperation with the Kansas Agricultural Experiment Station, arrived in Washington on October 9 to confer with Department officials. On the way he stopped at La Fayette, Ind., to confer with Agricultural Experiment Station officials. Mr. Johnston will return to Kansas about October 24.

VISITORS

Dr. Donald Reddick, professor of plant pathology, Cornell University Agricultural Experiment Station, was an Office visitor on September 30.

MANUSCRIPTS AND PUBLICATIONS

64 An article entitled "Stripe Rust (<u>Puccinia glumarum</u>) on Wheat in Argentina," by <u>H. B. Humphrey</u> and <u>R. O. Cromwell</u>, was approved on September 29 for publication in Phytopathology.

65 An article entitled "Recovery Following Genetic Deficiency in Maize," by L. J. Stadler, was approved on October 4 for publication in the Proceedings of the National Academy of Sciences of the United States.

by Ruth F. Allen, for publication in Science, was read on October 2.

Galley proof of Farmers' Bulletin 1650 entitled "Flaxseed Production by Power-Farming Methods in the Northern Great Plains," by A. C. Dillman and E. A. Starch, was read on October 8.

Page proof of article entitled "Wheat Take-All Symptoms Compared with Injuries Caused by Chinch Bugs," by <u>Hurley Fellows</u>, for publication in Phytopathology, was read October 4.

Page proof of article entitled "Host Specialization of Barley Leaf Rust, <u>Puccinia anomala</u>," by <u>E. B. Mains</u>, for publication in Phytopathology, was read October 4.

The article entitled "Some Applications of Statistical Methods to Agronomic Experiments," by <u>Frederick D. Richey</u>, appears in the Journal of the American Statistical Association 25 (new series 171): 269-283. September 1930. (This paper was presented in part before the Round Table on Biology, at the annual meeting of the American Statistical Association, Washington, D. C., December 30, 1929.)

Farmers' Bulletin 1631 entitled "Broomcorn Growing and Handling," by John H. Martin and R. S. Washburn, has just been received from the Government Printing Office.

The article entitled "Importance of the Small Grains in the United States," prepared by <u>C. E. Leighty</u> for presentation at The Inter-American Conference on Agriculture, Forestry and Animal Industry, held in Washington from September 5 to 20, 1930, appears as a 6-page mimeographed pamphlet. The article has been translated into Spanish and appears as an 8-page mimeographed pamphlet.

FIELD STATION CONDITION AND PROGRESS

(All experiments except those conducted at the Arlington Experiment Farm, Rosslyn, Va., are in cooperation with State agricultural experiment stations or other agencies.)

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor) (Oct. 3)

Continued dry weather has prevailed in the vicinity of Washington and in the adjoining States. Because of lack of rain this summer the ground on the Arlington Experiment Farm has packed but little and is easily worked into a good seed bed without moisture. Oats and barley have been sown in the past few days despite the dry seed bed.

Considerable plowing and disking of corn ground has been done in parts of Maryland, West Virginia, and Virginia. A surprisingly large quantity of rye was sown during the latter part of August in the hope of obtaining fall pasture. Some of the seed has germinated. Withered and dying plants are common, however, in fields that have been examined. It is probable that rye seeded for pasturage will replace wheat to some extent.

The deficiency of precipitation since January 1 totals 13.7 inches at the Arlington Farm. In none of the first nine months of the year has there been an average rainfall. The combined August and September rainfall was 1.31 inches, as compared with an average of slightly over 8 inches.

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY/(South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

ARKANSAS

Agricultural Experiment Station, Fayetteville (Rice Diseases, E. C. Tullis)

MISSOURI

Agricultural Experiment Station, Columbia (Rice Agronomy, B. M. King)

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

OHIO -

Agricultural Experiment Station, Wooster (Corn Investigations, G. H. Stringfield)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, H. C. Murphy)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, LaFayette (Corn Rots and Metallic Poisoning, J. F. Trost, Acting in Charge)

Purdue University Agricultural Experiment Station, LaFayette (Leaf Rusts) (R. M. Caldwell)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, R. G. Shands, Acting in Charge)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, E. R. Ausemus)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

TEXAS

Substation No. 6, Denton (Wheat Improvement, I. M. Atkins)

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger)

Woodward Field Station, Woodward (Wheat Improvement, Edmund Stephens)

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker) (Sept. 30)

Wheat rod rows were sown September 20 to 27. Space-planted hybrids were sown from September 29 to October 3. The varietal plots on the Agronomy Farm, under the direction of Prof. S. C. Salmon, were seeded September 25 to 27.

About the middle of September a trip was made to Tribune, Garden City, and Hays in the interests of sorghum growing. At the Tribune Substation certain selections of the early maturing types known as Pink Freed combine the earliness of Freed with the head type of Pink kafir and appear promising and well adapted to the rather severe conditions of the Tribune region.

The milo disease project was studied at Garden City by Prof. L. E. Melchers.

At the Ft. Hays Branch Station progress is being made in the production of sorghum types suitable for the combine. Yellow kafir and several more recent varieties appear very promising.

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Upon invitation of the president of the Wheat Farming Company a trip was made to Monument, Sharon Springs, and Weskan, where were seen the first fields of Beaver milo ever grown in Kansas. They comprise about 200 acres. The crop is fairly well matured and probably will yield 25 to 35 bushels to the acre. Some heads were "goosenecked" which probably was the result of thin stands and seasonal conditions. An 800-acre field of Dawn kafir and a 400-acre field of feterita were seen. Wheat seeding operations were seen in one field where five furrow drills were being used hitched to a tractor, seeding a strip 60 feet wide and covering 720 acres a day, using 540 bushels of seed wheat, and doing the work at an average cost of about 65 cents an acre.

Southeastern Kansas Experiment Fields, Parsons (I. K. Landon, in charge) By informal cooperation between Kansas Agricultural Experiment Station and the Office of Cereal Crops and Diseases) (Sept. 13)

The yields of eight varieties of flax grown near Columbus, Cherokee County, and near Moran, Allen County, in southeastern Kansas, have been reported by Mr. I. K. Landon in charge of Southeastern Kansas Experiment Fields.

Yields of 8 flax varieties grown on the Southeastern Kansas Experiment Fields, in triplicate plots at Columbus and in duplicate plots at Moran, in 1930.

Variety	C.I. No.	Y	ield (bu. per	acre)
		Columb	us Moran	Av.
Linota	244	9.56	13.70	• 11.63
Buda	326	9.36	11.98	10.67
Winona	169 .	3.74	12.51	10.67
Bison	389	S.19	11.91	10.05
N.D.R. 114	13	6.32	13.02	9.92
Southwestern (local)		7.70	11.44	9.57
Argentine				
Rio (L.79)	280	9.22	13.39	11.30
Commercial	438	6.04	9.40	7.72

In the date-and-rate-of-seeding test at Columbus flax sown March 31 and April 15 did not germinate well until rain fell on April 20 to 24. The flax sown on those two dates was therefore about the same in period of growth and maturity. The yields are shown in the following table.

Yields of Lineta flax seeded at 5 rates and on 4 dates in single plots, at Columbus, Kansas, in 1930.

	Yield (Bushels)
Rate of	: Date of Seeding : Average
Seeding	; of
	: 3/18 : 3/31 : 4/15 : 5/6 : 4 dates
(Pounds) .	Bu. Bu. Bu. Bu. Bu.
20	5.4 3.5 3.5 4.7 4.3
30	5.3 Www. 25.2
40 - 1 - 1 - 1	4.8 7.6 5.3 4.1 4.1 5.5
50 . * * :	5.6 7.9 7.6 4.1 6.3
60	5.3 4.4 7.0 5.3 5.5
Average of	and the second of the second o
5 rates	5.3 5.6 7 5.7 4.7 4.7 4.7
	The state of the s

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston)

Fort Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson)

COLORADO

United States Dry-Land Field Station, Akron (Wheat Improvement, J. J. Curtis) [Oct. 1]

Through the kindness of Supt. J. F. Brandon the yields of the winter-wheat varieties grown in replicated plots at Akron in 1929-1930 have been tabulated. The yield figure presented is the average of 4 plots, two having been grown on corn land and two on fallow.

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, N. E. Jodon) (Oct.)

Twenty-eight varieties of winter wheat were seeded on September 16.
Two new varieties, Kanred x Prelude (C. I. 8886) and Turkey Selection,
Nebr. No. 4319 (C. I. No. 10016), were included. The seedlings emerged
in seven days. The nursery was seeded on September 17 and 18 and emerged
a week later.

While precipitation has been recorded on only one day, 0.29 of an inch on September 26, there is sufficient moisture in the soil to give wheat a good start. It makes a fine appearance at present. The soil temperatures are still high, but it is hoped that the smut nursery can be seeded within a very few days.

Yellow kafir, our highest yielding variety of sorghum last year, looks excellent again this year. The sorghums were not injured by a temperature of 35 degrees on September 28.

Dr. J. H. Martin visited the Substation on September 24.

Average yield of spring-wheat varieties grown in quadruplicate 50th-acre plots at the North Platte Substation, 1930

Class and Variety		C.I. No.	Yield (Bu. per acre)
Hard Red Spring			
Ceres		6900	23∙8
Java (Kearney Co.)			23.5
Reward		8182	. 22•2
Progress		6902	21.5
Marquillo Marquillo	0 12	6887	, 20 . 5
Reliance		7370	19.1
Garnet		8181	18.2
Hope		8178	16.0
Marquis	: 1	3641	15.6
H- //	. •	8177	15.3
Supreme		8026	15.1
Durum		6 m	
Nodak		6519	22.2
Akrona		6881	20.8
Kubanka		1,440	20.8
Mindum		5296	20.6
White		CCan	
Quality		6607	20.3

Agricultural Experiment Station, Lincoln (Wheat Improvement, C. A. Suneson)

SOUTH DAKOTA

United States Field Station, Redfield (Wheat Improvement, E. S. McFadden)

U. S. Dry-Land Field Station, Ardmore (O. R. Mathews) (Office of Dry-Land Agriculture) (Oct. 3)

The following table presents the yield of spring-wheat varieties grown in triplicate 50th-acre plots in 1930. There is no difference between varieties in date of ripening. No variety ripened normally. The combination of drought and hot winds caused all varieties to mature at practically the same time.

The outstanding feature of the varietal experiment this year was the low yields and extremely poor quality of Hope wheat. Last year, under conditions that appeared to be nearly as severe as those this year, Hope was the highest yielding variety of bread wheat.

All varieties were closely examined for stem rust but none was found. No records were kept on leaf rust but it may be said that there was an unusually small percentage.

Yields of spring-wheat varieties grown in triplicate 50th-acre plots at the U.S. Dry-Land Field Station, Ardmore, in 1930.

Class and Variety	C.I. No.	Yield	Test weight
Hard Red Spring		(Bu. per acre)	(Lbs.)
	Ø2 Ø0	77 6	=1.
Reward	ğ182	11.7	54
Ceres	6900	11.4	56
Reliance	7370	10.3	53
Supreme	3026	9.5	54
Marquillo	6337	9.3	50
Kota	5878	8.6	56
Double Cross (Minn. 2305)	10005	7.8	54
Marquis	3641	7.5	52
Hope	8178	7.5	45
Durum			
Peliss	1584	10.1	51
Mindum	5296	9.4	53
Nodak	6519	9.2	53
Acme	5234	3.7	53
Kubanka	1440	5.6	54

Belle Fourche Field Station, Newell (Beyer Aune) (Office of Western Irrigation Agriculture) (Oct. 5)

Yields and test weight per bushel obtained from the spring-wheat varieties grown on irrigated and dry land at the Belle Fourche Field Station, 1930.

IRRIGATED LAND		* •			
Class and Variety			C.I. No.	Yield	Test weight
				(Bu. per acre)	(Lbs.)
Hard Red Spring					
Reliance			7370	35.0	62
Champlain			4782	33.3	59
Supreme	·		<u> </u>	30.8	59
Marquis			3641	30.6	59
Ceres		:	6900	30.3	60
Норе			§178	28.3	56
Marquillo			6887	27.0	57
Reward			8152	21.9	63
Durum			6	-	<i>c</i> .
Nodak			6519	40.3	60
Kubanka			1440	36.9	62
Mindum			5296	34. ?	63
White white			\ =\		5).
Federation			. 4734	29.2	54
DRY LAND					
Hard Red Spring			(. 54
Ceres	,		6900	22.2	58
Marquis			361+1	20.0	59
Durum	+ 10		- 1.1	0.77.7	
Kubanka			1440	23.1	60

NORTH DAKOTA

Northern Great Plains Field Station, Mandan (Cereal Agronomy, V. C. Hubbard)

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (Oct. 2)

Clear, dry weather prevailed during the last half of September. No rainfall was recorded until the night of September 30, when 0.39 of an inch was recorded. Today there is a heavy mist accompanied by a slow drizzle of rain.

The first killing frost of the season occurred on the night of September 27, when a temperature of 27° was recorded. Freezing temperatures were recorded every night from September 25 to 29, inclusive.

Strong winds occurred on several days in this period. The wind velocity averaged 14.4 miles per hour on September 24.

Rust infection has become general on flax in the flax-sick soil nursery. Susceptible varieties have rust infection on every plant. The resistant varieties, Bison and Buda, though infected to some extent, are not uniformly infected as they were in the nursery on Field Q.

About half of the nursery on flax-sick soil was harvested on September 27. Most of the remainder will be harvested as soon as the weather is dry.

Mr. Frank Rabak, of the Office of Drug and Related Plants, U. S. Department of Agriculture, visited the Station on October 1 to inspect the safflower and hemp.

The maximum temperature was 88° on September 18, minimum, 24° on September 27.

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (Oct. 4)

Field work with cereal crops at the Substation is practically finished for the season except taking stand notes on the winter wheat and rye. Good stands were obtained in varietal plots of these crops. Satisfactory germination also was obtained in the wheat-rye hybrids sown early in September. The seeding of the main winter-wheat nursery was delayed somewhat by rainy weather during the threshing of the seed needed for the nursery. The nursery is emerging unevenly. A rain last night should insure the germination of all seed not already germinated.

The total precipitation for September was 1.52 inches, all recorded the first half of the month. The maximum temperature was 89 degrees on the 5th and the minimum, 20 degrees on the 25th. While a few light frosts occurred early in the month, there were no general killing frosts until the last week of the month.

The following table presents the results obtained from a date-of-seeding experiment with 5 varieties of smut-inoculated spring wheat sown at 10-day intervals from April 12 to June 30. As in previous years, with some exceptions, the percentage of smut in the resulting crop decreased with the successive seedings. This probably was due largely to warmer soil conditions and shorter germination periods in the later seedings. Soil-moisture determinations were made and soil-temperature records were obtained with a soil thermograph, but the results have not yet been assembled.

Percentages of stinking smut obtained from five varieties of spring wheat inoculated with smut and sown at 10-day intervals on the Dickinson Substation in 1930

Percentages of stinking smut

Date sown	Норе	Quality	Marquis	Kota	Ulka No: 1	Av•
· 4-15	6.5	12.0	43.0	67.7	54,5	42.7
4-55	4.5	26.0	35.0	56.0	73.5	39.0
5-1	3.0	13.0	7.5	41.4	55.6	24.1
5_13	1.8	4.6	2.2	21.9	43.2	14.7
-5-22	1.2	0	1.7	10.0	14.5	5.5
6-2	0	0	0	0	7.3	1.6
6-11 ,	0	0	0	0	. 0	0.0
6-21 ^a /,						
6-30 ² /	***************************************					
Average	5.4	_i . 7•9	12•3	28.1	39.9	18.2

⁽a) Stands too thin for fair estimates.

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Langdon Substation, Langdon (Wheat Improvement, G. S. Smith) (Sept. 30)

In this section freezing temperatures were recorded on 10 days, the first being 31 degrees on September 3. The lowest temperature was 17 degrees on the 28th. Very high winds have prevailed much of the time. Precipitation in five showers totalled 1.03 inches.

The Uniform Winter Hardiness nursery, which was sown on September 15, emerged on the 20th but is growing slowly because of the lack of moisture and because of wind and cold weather. Not more than one-third of the seed has germinated.

Threshing of nursery and hybrid material has been completed. The latter consisted of 480 rod rows and 26 plant selections of F_2 durum crosses, 79 rod rows and 307 plant selections of F_2 durum crosses, and 19 F_0 crosses.

Prose millet varieties grown in duplicated 1/48-acre plots were threshed on September 27. Red Russian proved to be the highest yielder, producing 22.8 bushels per acre, while Turghai yielded 20 bushels per acre. White French was so late that practically no seed matured. Black Voronezh, Hansen's White Siberian, Yellow Manitoba, and Early Fortune also were grown. The varieties rank in yield in the order given.

MONTANA

Judith Basin Branch Station, Moccasin (Cereal Agronomy, B. B. Bayles)
(J. L. Sutherland) (Sept. 30)

The seeding of winter-wheat varietal plots and nursery has been completed. There was a fair supply of moisture in the summer fallow at the time of seeding and a good rain of 0.41 of an inch soon after seeding produced excellent stands of winter wheat.

Late rains following an exceedingly dry season caused the greater part of the summer fallow in the Judith Basin to be very weedy at seeding time. This condition made late cultivation necessary, particularly where winter wheat was to be seeded.

The first killing frost of the season was recorded on September 23 when a temperature of 30° was recorded.

All cereal plots and nursery have been threshed. The yields of winter and spring wheat varieties grown in plots are shown in the following tables.

Average yields of wheat varieties grown in four 1/50-acre replicated plots, at the Judith Basin Substation, Moccasin, Mont., 1930

Variety	:	C.I. No.	. :	Yield (Bu. per acre)
Hard Red Winter				
Kharkof Kharkof (Hays No. 2) Kanred Kanred x Minhardi Newturk Minhardi x Minturki Montana No. 36 Turkey Kanred x Minhardi Karmont Kanred x Minessa Nebraska No. 60 Kanred x Minhardi Turkey Minhardi x Minturki Eureka x Minhardi Minturki x Beloglina-Buffum Oro DeKalb Kharkof Beloglina Minard Turkey x Minessa		1583 6686 5146 8042 6935 8215 5549 1558 10000 6700 8045 6250 8040 6152 8034 8033 8220 		22.2 21.7 21.6 21.4 20.6 20.6 20.6 20.6 20.6 20.5 20.4 19.6 19.5 19.4 19.3 19.0 18.6 18.6 18.6 18.7 17.7 17.0 15.8

<u>a/</u> Average of three plots <u>b/</u> Single plot

Variety	C.I. No.	Nursery No.	Yield (Bu. per acre)
Hard Red Spring	0		
Marquis x Hard Federation Do Kanred x Marquis Reliance Sel. 22 Marquis x Hard Federation Marquis Power Red Bobs Sel. 51 Kanred x Marquis Marquis x Kota Supreme Reliance Marquillo Ceres Reward Marquis x Hard Federation Do Red Bobs Sel. 32	 5354 3641 3697 5004 5026 7370 6557 6900 5152	666 456 11 17 649 41 1656.84 653 708	14.1 13.9 13.8 13.6 13.6 13.6 13.1 12.3 12.7 12.3 12.3 12.1 12.0 11.8 11.5 11.5
Marquis x Hard Federation Hope	 \$178	657 	11.2
<u>Thite</u>			
Baart Federation Hard Federation Durum	1697 4734 4733		14.3 10.5 9.5
Peliss Sel. 14 Nodak Mondak Mindum Kubanka	10001 6519 7287 5296 1440		12.7 12.6 12.6 12.0 12.1

Northern Montana Branch Station, Havre, Mont. (M. A. Bell) [Oct. 1]

Twenty-four varieties and hybrid selections of spring wheat were sown April 30 at the rate of 55 pounds per acre on plowless fallow in triplicated 1/50-acre plots. All seed was uniformly treated with copper carbonate dust for the prevention of covered smut. Soil-moisture reserves held over in the fallow from 1929, supplemented by timely showers just after seeding, promoted even germination and good stands were recorded on May 13. "Cool weather the second week in May retarded very rapid emergence. The remaining part of May, however, witnessed favorable growing conditions until the last five days when a 4-week period began, characterized by frequent strong winds, high temperatures at times, persistent low relative humidity, and only two rains of consequence. These adverse circumstances forced the crop much too rapidly, and earlier varieties began heading very short during the last week of June. While the variety project escaped serious blighting of the upper part of the heads, a condition prominent in other parts of the experimental field, the spikes were noticeably short and poorly filled at maturity. grain that formed, however, was of very good test weight. July weather only hastened the harvest with a long series of hot rainless days, all plots being cut during the interval between July 29 and August 2.

Of the hard red spring class, it is of interest to note that three Marquis x Hard Federation hybrids, Nos. 705,666, and 649, topped the list. The established varieties of importance were led by Suprem. Reward, Ceres, Reliance, and Marquis ranking next in order. Marquillo, Kota, and Hope occupied places at the bottom of the group.

The durums headed by Peliss were rather closely arrayed with respect to yield, only 1.4 bushels separating the highest and lowest yielding varieties.

The white-wheat class again showed Baart to be outstanding. In fact, this variety for the fifth time in ten years, outyielded all other varieties.

Yield of spring-wheat varieties grown in triplicate 50th-acre plots at the Northern Montana Branch Station, Havre, Mont., 1930

Class and variety	C.I. No	Nurserv.	Yield	: Test : weight
			(Bu. per acre	
			<u> </u>	/ (====/
Hard Red Spring				
				7.0
Marquis x Hard Federation		708	12.0	56
Do .		666 649	11.7	5g 59
Marquis x Kota 1656.84	5004		10.0	60
Kanred x Marquis	7372		10.0	61
Supreme	go 26		9.7	61
Kitchener	4500		9.7 .	58
Reward	g182		9.5	62
Red Bobs No. 222			9.5	59
Ceres	6900		9.2	.60
Marquis x Hard Federation		653	9.2	55
Reliance	7370	657	9.2	60 56
Marquis x Hard Federation Marquis	3641	057	g•9 · s•9	59
Marquillo	6887		g. 6	5g 5g
Kota	6248		S.3	62
Норе	8178		7.0	56
Durum				
			N	<i>C</i> -
Peliss	1584 6881		11.4	62
Akrona Kubanka	1440		10.8 10.8	61 61
Nodak	6519		10.3	61
Mindum	5296		10.0	62
			2010	
White				
Baart	1697		12.8	60
Federation	4734		s. 9	58

Yields of winter-wheat varieties grown in triplicate 50th-acre plots on corn ground at Havre, Mont., 1930

Variety	: C.I. No.	Yield: (Bu. per acre)	: Test : weight : (Lbs.)
Turkey x Minessa Kanred x Buffum No. 17 Turkey Minhardi x Minturki Kanred x Minhardi Oro Kanred Montana No. 36 Newturk Kharkof Karmont	8028 8030 1558 8034 8031 8220 5146 5549 6935 1583 6700	5.6 5.0 4.7 4.7 4.7 4.5 4.5 4.2 4.2 3.1	60.0 60.5 59.5 59.0 56.5 59.0 60.0 60.0 60.0

WYOMING

U. S. Dry-Land Field Station, Sheridan (R. S. Towle) (Office of Dry-Land Agriculture) (Oct. 6)

Yields and test weight per bushel obtained from spring-wheat varieties grown in triplicate 1/50-acre plots on fallow at the United States Dry-Land Field Station, Sheridan, Wyo., 1930

Class and Variety	C.I. No.	Yield (Bu. per acre)	Test weight (Lbs.)
Hard Red Spring		_	
Ceres	6900	21.6	55
Marquis x Kota 1656.48	10014	19.3	56
Reward	S182	18.9	56
Marquis	3641	18.9	56
Reliance	7370	13.2	56
Swyreme	302 6	17.8	58
Kota	6248	17.3	59
Marquillo	6837	17.3	53
H_\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	8177	16.9	50
Hope	S17S	14.7	51
Durum			
Kubanka	1440	20.4	60
Nodak	6519	15.7	57
Akrona	6881	17.5	58
Mondak	7287	16.0	59
Mindum	5296	15.8	58

WESTERN BASIN AND COAST AREAS (North to West and South)

'UTAH

Agricultural Experiment Station, Logan (Wheat Improvement, R. W. Woodward) (Sept. 4)

The latter part of the ripening season for winter wheat in this region was very hot and dry. On the east side of Cache Valley there was a heavy rain accompanied by high winds on July 10. This caused lodging in the spring nursery at North Logan. The yields of the late strains apparently were reduced by kernel shrinkage.

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, L. L. Davis)

Agricultural Experiment Station, Moscow (Wheat Improvement, V. H. Florell)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines) (W. K. Smith)

Agricultural Experiment Station, Pullman (Stinking Smuts of Wheat, H. H. Flor)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)
(Aug. 19)

Yield of spring-barley varieties grown in quadruplicate 1/20th-acre plots on the Sherman County Branch Station, Moro, Oreg., in 1930

Variety	: C.I. No.	: Yield : : (Bu. per acre) : Av. : Ser. 1 : Ser. 2 : Ser. 3 : Ser. 4 :
Trebi Peruvian Areguipa Club Mariout Pryor Flynn Atlas Meloy Pryor Chevalier	936 935 1256 261 2359 1311-1 4118 1176-3 1429 1419	43.8 40.8 40.8 40.4 41.5 37.5 40.4 40.4 42.5 40.2 38.8 39.6 35.4 40.4 38.6 33.8 38.3 42.5 38.8 38.4 36.2 40.0 35.8 38.8 37.7 37.9 41.3 32.1 28.8 37.5 36.7 36.7 36.2 40.0 37.4 39.6 39.2 35.4 35.0 37.3 35.0 38.8 34.6 39.6 37.0 35.8 38.3 37.1 36.2 36.9

Agricultural Experiment Station, Corvallis (Foot Rots of Wheat, Roderick Sprague)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)

University Farm, Davis (Cereal Agronomy, G. A. Wiebe)



LI. 1930

CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22 October 20, 1930 No. 26
Personnel (Oct. 11-20) and Field Station (Oct. 1-15) Issue

PERSONNEL ITEMS

Mr. C. H. Kyle, senior agronomist in corn investigations, returned to Washington on October 16 from an extended trip to points in South Carolina, Georgia, and Tennessee, where he conducted experimental investigations on corn. From the experiments in South Carolina and Georgia fairly satisfactory data were obtained this year, although in southern Georgia the stands were badly broken by insect damage and later by storms. In Tennessee the dry weather had seriously damaged corn, but in Knoxville the breeding experiments are giving an abundance of seed and no lines will be lost owing to the unusual season.

Dr. J. H. Martin, agronomist in charge of grain sorghum and broomcorn investigations, returned to Washington on October 15 from a 10 weeks trip. He spent 10 days visiting the grain-sorghum-producing regions of California, and for a period of two weeks he conducted physiological experiments with sorghums at Sacaton, Ariz. Dr. Martin visited field stations in the southern Great Plains States, where he took notes on sorghum hybrids. In this section he also visited the leading growers of Grohoma, a new grain sorghum now being widely exploited.

Dr. Herman A. Rodenhiser, formerly agent in the cooperative investigations of flax diseases at St. Paul, Minn., has been appointed pathologist with headquarters at Arlington Experiment Farm, near Washington, effective October 16. He will be engaged in the investigation of physiologic forms of stinking smut of wheat and of corn smut and of certain sorghum smuts. Dr. Rodenhiser has been working in this field for some time and is unusually well prepared to undertake this exacting and difficult research.

Mr. Glen H. Stringfield, assistant agronomist in the corn investigations that are being conducted in cooperation with the Ohio Agricultural Experiment Station and the Ohio State University, has gone to Columbus, Ohio, where he will work up results of experiments with corn and plan future experimentation in cooperation with personnel of the Ohio State University. Mr. Stringfield expects to be in Columbus about six months.

Mr. Robert E. Wester, assistant scientific aid in oat investigations, was granted the A. B. degree by George Washington University on October 16.

VISITORS

Dr. L. R. Jones, of the University of Wisconsin, was an Office visitor October 14 and 17.

Dr. Raimundo Nieves, Director de la Estación Experimental de Guatrache (Pampa Central), Argentina, South America, was an Office vistor on October 15

Mr. Geoffrey Samuel, plant pathologist, Waite Agricultural Research Institute, University of Adelaide, South Australia, was an Office visitor October 14. Mr. Samuel is especially interested in virus diseases of tomatoes.

Dr. E. C. Stakman, of the University of Minnesota, was an Office visitor October 14 and 15. Dr. Stakman is en route to Germany where he will act in charge of the department of plant pathology at the University of Halle a. Saale for six months.

MANUSCRIPTS AND PUBLICATIONS

- 66 A manuscript entitled "The Cereal Rust Fungi: Their Nature and Origin," by M. N. Levine, was approved on October 14 for publication in Hassadeh, a Palestinian journal.
- 67 A manuscript entitled "A Statistical Study of Wheat and Oat Strains Grown in Rod-Row Trials," by F. R. Immer and E. R. Ausemus, was approved on October 14 for publication in the Journal of the American Society of Agronomy.
- 68 A manuscript entitled "Inheritance of Resistance to Rust, Puccinia sorghi, in Maize," by E. B. Mains was submitted on October 15 for publication in the Journal of Agricultural Research.

Galley proof of Department Circular 141 entitled "Hardiness and Yield of Winter-Wheat Varieties," by <u>Karl S. Quisenberry</u> and <u>J. Allen Clark</u>, was read on October 13.

Galley proof of article entitled "Physiologic Specialization and Mutation in <u>Phlylctaera linicola</u> Speg.," by <u>H. A. Rodenhiser</u>, for publication in <u>Phytopathology</u>, was read on October 14.

The article entitled "Accumulated Iron in the Nodes of Corn Plants," by J. D. Sayre, appears in Plant Physiology 5(3): 393-396, illus. July, 1930. (Cooperation between the Office of Cereal Crops and Diseases and the Departments of Botany and of Agronomy of the Ohio Agricultural Experiment Station.)

Technical Bulletin 207 entitled "Seed Treatment for Controlling Covered Smut of Barley," by R. W. Leukel, was received from the Government Printing Office on October 20.

The following articles by members of the Office staff appear in the Journal of the American Society of Agronomy for October, 1930:

Coffman, F. A. and G. A. Wiebe. Hybrid Vigor in Oats. Jour. Amer. Soc. Agron. 22(10): 545-560. October, 1930. (Cooperation Between the Office of Cereal Crops and Diseases and the Idaho Agricultural Experiment Station.)

Jones, Jenkin W. Sterility in Rice Hybrids. Jour. Amer. Soc. Agron. 22(10): 561-567. October, 1930. (Cooperation between the Office of Cereal Crops and Diseases and the California Agricultural Experiment Station).

Swanson, Arthur F. Variability of Grain Sorghum Yields as Influenced by Size, Shape, and Number of Plats. Jour. Amer. Soc. Agron. 22(10): 833-838. October, 1930. (Cooperation between the Office of Cereal Crops and Diseases and the Kansas Agricultural Experiment Station).

ERRATUM

The title of the paper presented by Dr. C. E. Leighty at The Inter-American Conference on Agriculture, Forestry and Animal Industry held in Washington from September 8 to 20, 1930, should read "Improvement of the Small Grains in the United States," instead of "Importance of the Small Grains in the United States," as stated in the Cereal Courier, Vol. 22, No. 25, October 10, 1930.

NOTICE

The 23rd annual meeting of the American Society of Agronomy will be held at the Raleigh Hotal, Washington, D. C., on Thursday and Friday, November 20 and 21.

ADMINISTRATIVE NOTES

Liability Insurance for Operators of Government-Owned Motor Vehicles.

The attention of all employees who drive Government-owned trucks or passenger automobiles is especially called to the two following memoranda from the Office of the Director of Personnel and Business Administration. The policy has been adopted of requiring all employees who drive Government machines to carry some form of liability insurance. It is requested, therefore, that the matter be given prompt attention, and that all employees who do not carry such insurance avail themselves of the opportunities offered in these memoranda, or procure some other liability insurance. The Office of Cereal Crops and Diseases should be informed of such provisions as are made to meet the requirement so that a record may be kept of all those who are driving or are eligible to drive Government-owned machines.

Insurance of Government-owned Motor Vehicles for the Benefit of Groups of Official Users.

Some months ago there was circulated among the personnel of the Department the offer of a Washington insurance agency to insure employees of the Department wherever located in the United States against liability, both property and personal, for damage growing out of their official operation of Department-owned motor vehicles. This insurance was strictly personal, that is to say, the coverage protected irrespective of the car operated but attached to no individual automobile or truck.

Reitan-Lerdahl and Company, of the Pioneer Building, Madison, Wisconsin, have offered employees of the Department, wherever located in the United States, insurance on a different basis, that is, insurance covering specified Department cars or trucks for the benefit of all employees officially using the equipment. A description of the insured car, together with the name of the applicant for the insurance, is endorsed upon the master policy. The applicant receives a card evidencing his coverage and describing the insured equipment. Similar cards will at request be furnished all prospective drivers of the equipment if their names are supplied the insuring company. Any Government employee who drives the insured car or truck is within the coverage so long as he operates lawfully, that is, in conformity with the laws and ordinances governing motor operation in the territory, such as those with respect to licensing, age, etc. While it is to be expected that benefiting employees will pool funds for the premium, the arrangement will be strictly a matter of agreement within the group; that is to say, the insurer is not interested in the number of contributors, and the protection of the employee using the equipment is not dependent upon contribution.

The plan is described in letter from Reitan-Lerdahl and Company to the Department of May 8 in the following language:

Our plan of underwriting is roughly as follows; the master policy is issued in the name of "Officers and Employees of the Federal Government of the United States as herein limited." The limitation mentioned consists in limiting coverage to Government employees who are driving Government cars when such cars are endorsed for coverage on the master policy. As each application for insurance is received with the proper information concerning the cars involved, we attach an endorsement to the master policy and mail a copy of this endorsement with the certificates to the person making application. It is this person to whom we usually look for the payment of the premium, and he usually pro-rates the cost among all the men who drive cars in question.

We charge the standard rate for the territory and car involved, minus a fleet rate of 15 per cent. At the end of the term for which the cars are insured (one to twelve months) we return to the applicant the standard 25 per cent dividend which has been paid ever since the Company's organization in 1912.

This policy is issued through us by the Lumbermens Mutual Casualty Company of Chicago, a company with nearly \$12,000,000 in assets whose financial statement we enclose. Since the company has claim representatives within easy reach of almost every locality in the United States and Canada, we are able to offer you prompt service at any and all times.

The amount of the premium and amount of return dividend in a given instance are shown in extract of letter from the company to an employee of one of our bureaus who arranged insurance in the interest of a group at a field station.

The premium covering \$5,000-10,000 of public liability and \$5,000 property damage for the period specified is \$6,38. At the end of the policy period, there will be returned to you a dividend of \$1.59, which will make the net cost \$4.79. It is customary in insuring these cars for the leader of the group to pro-rate the cost among the drivers.

The scope of the coverage is shown by the following extract from the policy.

The terms and conditions of this policy are so extended as to be available, in the same manner and under the same conditions as they are available to the named Assured, to any person or persons while riding in or legally operating any of the automobiles described in the Special Conditions, and to any person, firm or corporation legally responsible for the operation thereof, provided such use or operation is with the permission of the named Assured, or, if the named Assured is an individual, with the permission of an adult member of the named Assured's household other than a chauffeur or a domestic servant; except that the terms and conditions of this paragraph shall not be available to a public automobile, garage, automobile repair shop, automobile sales agency, automobile service station, and the agents or employees thereof.

It is assumed that this plan will interest only employees at field stations where only one or a limited number of cars are used by several employees. Those who desire to look further into this opportunity should as a first step select one of their group to correspond with Reitan-Lerdahl and Company, describing the equipment. There will be sent in response questionnaires or application forms bringing out the information necessary for quotation of a premium rate. Remittances will be made directly by the interested employees to the company; the master policy will be filed in the company's offices at Madison. The insurance is understood to apply soley to Departmentowned equipment officially operated.

The circulatization of the above information is unofficial and should not be interpreted as implying any encorsement or recommendation of Reitan-Berdahl and Company or any intimation that the insurance plan which they offer is preferable to what may be elsewhere obtained. The information is given out in view of the receipt of many inquiries from field officers as to the possible existence of an opportunity to insure individual trucks or automobiles for the benefit of groups of users and the prevalence of an opinion that under certain conditions this may be more economical than the personal coverage. It happens that the offer of Reitan-Lerdahl and Company is the first proposal which has come to the attention of the Department of such scope as to be available to all employees and in all locations.

W. Stockberger

Director

Group Insurance for Department Motor Vehicles with Ralph W. Lee and Company.

Ralph W. Lee and Company advise that their group insurance rates for the year beginning November 1, 1930, will be \$3.00 for personal injury damage up to \$5,000 for one and \$10,000 for two or more persons and for property damage up to \$5,000. For personal damage up to \$10,000 for one person and \$20,000 for two or more persons and property damage up to \$5,000 the charge is \$9.60.

Recapitulating what was stated in a former circular on this subject:

The insurance is purely personal. No particular car is covered. The protection runs with operation of Government-owned cars or cars assigned to Government use. It does not extend to privately owned cars operated on a mileage basis.

The group policy terminates November 1, 1931, in all cases, and there is no reduction in premium to those who buy insurance after November 1, 1930.

It is important to note that hereafter checks in payment of premium should be sent directly to Ralph W. Lee and Company, 1508 L Street, N. W., Washington, D. C., and not, as hitherto, to the Chief Clerk of the Department. With check should be letter of advice giving remitter's permanent address, with name either typed or so printed as to be completely legible. The master policy will be retained in the Department as hitherto. Receipts for remittances will be forwarded to employees by Lee and Company.

Ralph W. Lee and Company state that they are prepared also to insure Government cars to cover official operation by any employee. Rates may be obtained upon application direct to the company. With inquiries there should be furnished location of car, make, model number and year, and statement whether touring or sedan.

W. W. Stockberger

Director of Personnel and Business Administration.

FIELD STATION CONDITION AND PROGRESS

(All experiments except those conducted at the Arlington Experiment Farm, Rosslyn, Va., are in cooperation with State agricultural experiment stations or other agencies.)

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to Worth)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jonkins)

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

ARKANSAS

Agricultural Experiment Station, Fayetteville (Rice Diseases, E. C. Tullis)

MISSOURI

Agricultural Experiment Station, Columbia (Rice Agronomy, B. M. King)

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

OHIO

Agricultural Experiment Station, Wooster (Corn Investigations, G. H. Stringfield)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Cats, H. C. Murphy)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, LaFayette (Corn Rots and Metallic Poisoning, J. F. Trost, Acting in Charge)

Purdue University Agricultural Experiment Station, LaFayette (Leaf Rusts, (R. M. Caldwell)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, R. G. Shands, Acting in Charge)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, E. R. Ausemus)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, H. A. Rodenhiser)

GREAT PLAINS AREA (South to North)

TEXAS

Substation No. 6, Denton (Wheat Improvement, I. M. Atkins) (Oct. 7)

The drought here is broken at last. It started raining last Saturday morning and rained almost without stopping until Monday afternoon. A total of 5.10 inches of rain was recorded. Considering the quantity of water that fell a very small portion was lost by run-off. This no doubt will bring up the early seedings in good shape. It is hoped that the weather will remain clear long enough to do the rest of the seeding. It probably will not be possible to get into the field before Friday.

OKLAHOMA

Woodward Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger)

Woodward Field Station, Woodward (Wheat Improvement, Edmund Stephens)

Commence of the second of the

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston)

Fort Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson) (Oct. 15)

The rainfall for the first 15 days of October was 5.02 inches, the highest record for the period in 67 years. This rainfall came immediately after the bulk of the wheat seeding in this section. Consequently wheat prospects are excellent. This is generally true for most of the wheat belt of Kansas.

Northwestern Kansas, which several years ago was in a drought-stricken area, is this year the garden spot of the State. A fine wheat crop was produced. Corn probably will yield between 50 and 75 bushels in many fields. The corn in the Hays section is almost a total failure but the sorghum crop is satisfactory. At the present time fields are so wet that the harvest is delayed.

The most urgent demand on the Station at this time is for a sorghum suited to combine methods of harvesting. Many types developed at the Woodward Field Station, Okla., and at this Station have been tested for the last three years. Several types are ready for limited distribution in 1931. With some modifications grain sorghums can now be handled with wheat machinery. The newest method is to drill the crop in a manner similar to that used for wheat. With a special receiving device the crop is windrowed and later threshed with a combine and pick-up attachment. A 20-foot combine will windrow 75 acres a day. Only three men are required for this operation. At a somewhat later date the grain can be threshed at the rate of a 1,000 bushels or more a day, depending on the yield of the crop. For this operation only three men are needed in addition to the truck drivers.

COLORADO

United States Dry-Land Field Station, Akron (Wheat Improvement, J. J. Curtis)

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, N. E. Jodon)

Agricultural Experiment Station, Lincoln (Wheat Improvement, C. A. Suneson)

SOUTH DAKOTA

South Dakota State College of Agriculture, Brookings (K. H. Klages and Rex Bankert) (Cct. 16)

Yields, percentage of stem-rust infection, and test weight per bushel obtained from spring-wheat varieties grown in triplicate 1/60-acre plots at State College, Brookings, S. Dak., in 1930

Class and Variety	C. I.	Stem Rust	Yield	Test Weight
Hard Red Spring	No.	(Per cent)	(Bu. per acre	(<u>Lbs.</u>)
Marquis x Kota 1656.48	10014	7	22.5	59.5
Reward	3132	41	21.3	62.0
Ceres	6900	10	21.2	59.5
Double Cross, Minn. 2303	10003	1	21.2	56.0
Marquis x Kota 1656.34	3004	g	20.5	59.0
Double Cross, Minn. 2305	10005	3	20.0	60.0
Reliance	7370	20	19.3	59.0
Garnet	3181	41	18.7	57.0
Marquillo Marquillo	6887	5	17.3	56.5
Prelude	4323	37	16.7	60.0
Marquis	3641	31	16.3	58.0
Hope.	8178	Tr	15.8	55.0
Supreme	8026	50	15.3	54.3
Kota	5378	6	15.5	60.5
H- //	3177	Tr	15.2	53.0
Durum				
Mindum	5296	1	22.0	61.5
Arnautka	4064	2	20.3	59.5
Kubanka 75-3-15		1	20.0	60.0
Acme	5284	${\tt Tr}$	20.0	61.0
Monad	3320	1	19.7	61.0
Nodak '	6519	1	19.5	59.0
Kubanka	1440	2	19.3	60.0
White				
Quality	6607	48	19.7	53.0

Highmore Substation, Highmore (K. H. Klages and S. W. Sussex) (Oct. 16)

Yields, percentage of stem-rust infection, and test weight per bushel of spring-wheat varieties grown in triplicate 1/60-acre plots at the Highmore Substation in 1930

Class and Variety	C. I. <u>No</u> .	Stem Rust (<u>Per cent</u>)	Yield Tes (Bu. per acre)	st Weight (Lbs.)
Hard Red Spring	er = 1.	_	- 6 -	~-
Marquis x Kota 1656.84	£004	Tr .	26.3	55
Ceres	6900	2	25.3	58
Prelude	4323	5	24.3	61
Reward	3132	5	57:0	60
Garnet	3181	10	23.1	56
Marquis x Kota 1656.48	10014	Tr	21.7	58
Reliance	7370	5	13.8	55
Marquillo	6837	1	13.7	54
Supreme	3026	35	18.0	55
Double Cross Minn. 2305	10005	${\tt Tr}$	17.5	6c
Kota	5578	Tr	17.1	55
Marquis	3641	ÍO	16.8	54
Норе	8173	0	15.1	47
Durum				
Acme	5234	0	20.0	59
Kubanka	1440	0	19.3	57
Mindum	5296	0	19.1	59
Nodak	6519	C	18.5	58
Arnautka	4064	0	13.3	56
Kubanka 75-3-15	.00,	C	13.1	58
Monad	3320	Ö	17.8	58
***	3020		11.0	30
White				
Quality	6607	25	24.4	57

United States Field Station, Redfield (Wheat Improvement, E. S. McFadden)

Eureka Substation, Eureka (K. H. Klages and Walter Schonbrod) (Oct. 16)

Yields, percentage of stem-rust infection, and test weight per bushel obtained from spring-wheat varieties grown in triplicate 1/50-acre plots at the Eureka Substation in 1930.

Class and Variety	C. I.	Stem Rust (Per cent)	Yield (Bu. per acre)	Test Weight (Lbs.)
Hard Red Spring		\ <u></u>	/	·
Supreme	3026	20	18.1	5g
Marquis x Kota 1656.48	10014	${\tt Tr}$	18.0	59
Double Cross, Minn. 2305	10005	2	18.0	59
Ceres .	6900	Tr	17.5	59
Marquis x Kota 1656.84	300H	$\operatorname{\mathtt{Tr}}$	16.9	59
Reward	S132	10	16.9	62
Reliance	7370	5	16.9	58
Marquis	3641	5	16.7	56
Marquillo	6337	2	14.7	55
Hope	S178	0	13.9	52
Durim				
Acme .	5284	0	18.4	60
Kubanka .	1440	2	18.0	61
Kubanka 75-3-15		${\tt Tr}$	17.0	60
Nodak	6519	${\tt Tr}$	16.4	61
Mindum	5296	2	15.8	59

NORTH DAKOTA

Northern Great Plains Field Station, Mandan (Cereal Agronomy, V. C. Hubbard) (Oct. 16)

Acre yields of 20 of the highest yielding hybrids and varieties of wheat grown in triplicated rod rows replicated three times at Mandan, N. Dak., in 1930

200		Nursery	Yiéld
Hybrid or variety	C. I. No.	<u>170</u> .	(Bu. per acre)
	0. 1. 10.	<u>=:0</u> •	(<u>bu.</u>)c1 acto
Kota x Webster		H-132-25	21.5
Marquillo x Marquis-Kanred	-	. II-21-63	20.4
Kota x Webster		H-151-25	19.8
Marquillo x Marquis-Kanrea	10003		19.2
Marquis x Kota		1653.178	13.4
Reliance x Hope		1111	13.1
Marquis x Kota		1658.175	17.4
Kota x Webster		H-39-25	17.1
Marquis x Kota		1653.48	17.0
Marquillo x Marquis-Kanred	10002		16.2
Do		II-21-94	16.2
Do	1,0005		16.0
Kota x Quality		1077	15.8
Reliance, Sel.		13	15.1
Dol/ ·			15.1
Reliance x Hope		1118	15.0
Hope x Ceres		1106	14.9
Reliance Sel.		17	14.8
Marquis (Check)	3641		14.8
Marquis x Kota		1656.47	14.5
· Do ·		1078	14.7
Hope'x Ceres		1127	14.7
Marquis x Kota	g1 90		14.6
Hope in Cores		1097	14.6
Reliance	7370		14.5
Reliance x Hope		1117	14.5
Marquis (Check)	3641		14.5
Kubanka Sel. No. 132	8353		15.5

One hundred and forty-nine hybrids and varieties of winter wheat sown on September 11 have grown about 4 inches in height. Some stooling is in evidence but not as much as might be desired. The lowest temperature this fall--21° on the night of October 15--stiffened the leaves and resulted in a slight injury.

^{1/} Resistant to rust form 17.

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (Oct. 16)

The weather of the first half of October was almost continuously cloudy. Some precipitation was recorded every day except October 2, 5, and 15. Total precipitation for the first half of October was 1.85 inches which is 0.90 of an inch more than the average October precipitation for the past 55 years. The total precipitation to date for 1930 was 16.12 inches, 0.39 of an inch more than the average annual precipitation for the first 10 months of the year. October 15 was the only clear day.

Harvesting of the flax nursery was completed Oct. 15 with the exception of part of the dehiscent hybrid material and 42 rows in the after-ripening-loss experiment to be harvested October 31 and November 15.

Average yields from varietal and date-and-rate-of-seeding-and-tillage-experiment plots are presented in the following tables:

Yields of 19 varieties of flax and one of safflower grown in triplicate 50th-acre plots at Mandan, N. Dak., in 1930 and for the three years 1928-1930

<u>Variety</u>	C. I. No.	Av. yield 1930	Bu. per acre 1928-1930
Sib 206	473	5.4	. 6.9
Bison	339	5.0	6.3
N. D. 40034	491	4.7	
Slope	274	4.7	6.4
Linota	544	4.5	6.3
Buda x 19 x 112		4.5	
Buda, N. D. R. 119	326	74 • 74	6.0
Rio (Long 79)	280	4.2	6.3
Hybrid 19 x 112 Selection	478	4.2	
N. D. R. 52	275	4.1	5.8
Rio x Buda		3.9	
N. D. 40013	5/1	3.8	6.1
Hybrid 19 x 112 Selection	335	3 . 8	6.0
Winona	481	3.2	4.9
Selection 167-254	475	3.2	
Commercial Argentine	488	2.8	
N. D. R. 114	13	2.6	3.9
Chippewa	178	2.5	4.8
Redwing	499	1.9	5.7
Safflower		7.2	

Yields and weights of weeds in the date-and-rate-of-seeding-and-tallage experiment with flax at Mandan, N. Dak., in 1930

Date of Sections	Tillage Treatment 1/	Flax (Bu. per acre)	Weeds (Lbs.per acre)
May 10 May 20 May 31 June 10 April 30 May 10 May 10 May 20 May 20 May 20 May 20 May 20 May 20	DD 4-21 DD 4-21, DDH 4-30 DD 4-21, 4-30, DDH 5-10 DD 4-21, 4-30, 5-10, DDH 5-20 DD 4-21, 4-30, 5-10, 5-20, DDH 5-31 DD 4-21, 4-30, 5-10, 5-20, 5-31, DDH 6-10 DDH 4-30 DDH 4-30 DDH 5-10 DDH 5-10 DDH 5-20 PDHPK 4-30, DDH 5-20 PDHPK 5-20 PDHPK 5-31 PDHPK 6-10	5.1 5.5 4.1 4.4 2.8 0.1 4.1 3.2 3.7 3.0 3.9 . 5.1 3.9	2,462 1,035 2,249 154 797 3,491 1,749 1,224 1,545 257 279 695 349 444
Rate of State 24 pounds 32 pounds 40 pounds	6 dates of seeding 4-21,4-30,5-10,5-20, 5-31,6-10 do do	<u>Av.</u> <u>2</u> / 3.0 3.7 3.4	<u>Av.2</u> / 1796 1698 1789

^{1/} DD=double disk, H=harrow, D=pack with disk, PK= pack with cultipacker.

Stands and yields in the varietal plots sown May 17 were greatly reduced in spots by a severe wind storm June 1. The most severely damaged areas were reseaded, but they matured very little seed. All varieties apparently were damaged about equally.

^{2/} Average of six plots sown at six dates indicated above.

In the date-and-rate-of-seeding-and-tillage-experiment, moisture conditions favored growth of both flax and weeds in early seedings. Plots sown May 20 had much less weed growth, especially of Russian thistles, than plots sown on earlier or later dates.

Maximum temperature 71° October 3; minimum 21° October 15.

Freezing temperatures to date have caused only slight injury to volunteer flax, which varies in height from one to eight inches as it stands in the field. Most of the plants apparently are uninjured by frost. Volunteer plants of safflower have been nipped by frost but apparently are not killed.

<u>Dickinson Substation, Dickinson</u> (Cereal Agronomy, R. W. Smith) (Oct. 15)

The weather of the first half of October has been variable. There have been rather sudden changes in temperature and an unusual amount of cloudy, wet weather. The total rainfall has been about 1.20 inches besides that which fell in a sudden snowsquall this afternoon. The lowest temperature so far was 20 degrees early in the month, but a new low point perhaps will be reached tomorrow morning as the temperature has been falling all day with a cold northwest wind.

Yesterday was a mild Indian summer day and notes on the winter nursery showed the remainder of the wheat plants to be emerging in rows where partial germination took place some time ago. The soil is more thoroughly saturated with moisture than it has been at any time since seeding operations. A few weeks of warmer weather following the present cold spell should leave the winter grain in good condition for winter.

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Langdon Substation, Langdon (Wheat Improvement, G. S. Smith) (Oct. 15)

Foggy weather has prevailed in the first half of October and temperatures have not been so low as in September, the lowest being 32 degrees on the 13th. One rain of 1.58 inches and several light showers have totalled 2.46 inches of precipitation in the past 15 days.

The Uniform Winter Hardiness nursery is looking much better since the rain and is coming along slowly.

Simple correlations were run on the yield test weights and rustinfection percentages of the common wheat varieties for the past season. The results are as follows:

Correlation of	Coefficient and P. E.
Yield and rust infection	-0.905 ±0.025
Yield and test weight	+ .804 ± .054
Rust infection and test weight	712 = .077

With only 18 individuals the significance of such high values should not be overestimated, since the data did not give a normal distribution. However, they are interesting.

MONTANA

Montana Agricultural Experiment Station, Bozeman (Austin Goth)

. The following tables present the yields of spring wheat varieties grown under irrigation at Bozeman, Mont., in 1930

. Yield of spring-wheat varieties grown in triplicate 1/40-acre plots at the Montana Agr. Exot. Sta., Bozeman, Mont., 1930

Class and Variety Hard Red Spring:	Nursery No.	Mont. No.	C.I.	Yield (Bu. per acre)	Test Weight (Lbs.)
Reliance		582	7370	78.4	61.2
Marquis x Hard Federation	1 649			72.2	53 . 1
Supreme		531	S026	71.5	58.8
Marquis x Hard Federation				70.9	57.7
Marquis x Hard Federation	n 603			70.6	59.8
Marquis		511		69.3	62.8
Marquis			3641	69.3	61.2
Marquis x Hard Federation	ı 666			69.3	59.4
Marquillo		611	6887	68.2	57.4
Marquis x Hard Federation	n 653			64.9	56.6
Ceres		578	6900	64.7	59.6
Hope ·		600	3178	63.5	57.3
Reward		588	8132	54.2	62.2

• 35.

No.	Mont. C.I. Yield Test Weight No. No. (Bu. per acre) (Lbs.)
Durum:	and the second s
Mindum Nodak Kubanka	607 5296 65.3 60.3 537 6519 56.9 55.6 520 1440 51.5 57.0
White: The River Control of	
Federation Baart	503 4734 71.6 57.9 523 1697 66.9 59.7

Yield of spring-wheat varieties grown in triplicated 1/20-acre plots at Bozeman, Mont., 1930

Variety	Nursery No.	C. I.	Yield (Bu. per acre)
Reliance Sel. 16	14		70.0
Federation		4734	65.0
Hard Federation x Dicklow	574		67.3
Hard Federation x Dicklow	732	-	66.0
Reliance Sel, 22	17	8384	64.0
Federation x Dicklow	764		63.3
Kanred x Marquis	717	· ·	62.7
Kanred x Marquis	33	··	62.7
Federation x Dicklow	561		62.0
Double Cross		10003	56.7
Marquis (Mont. 513)			54.0
Marquis (Mont. 511)			53.3
Montana King (Mont. 586)	·	337 8	50.0
Hard Federation		4733	46.7
16			

Huntley Field Station, Huntley (Dan Hansen and A. E. Seamans) (Oct. 15)

Yields and test weight per bushel obtained from spring-wheat varieties grown in triplicate plots under irrigation and on dry land at the Huntley Field Station, 1930

		•	1.	
IRRIGATED LAND				
Class and Variety	C.I.	Nursery	Yield	Test Weight
	No.	No.	(Bu. per acre)	(Lbs.)
Thite			(====/,	\ <u></u> /
Federation	4734		59·2	60
rederation	4707		03.6	00
	•			
Hard Red Spring	-		•	
Reliance	7370		S2.5	63
Marquis x Hard Federation		666	79.4	60
Ceres	6900	•	79.2	62
Champlain	4732		77.5	62
Marquis	3641		75.3	61
Marquillo	6537		74.2	60
Supreme	3026		72.6	61
Норе	3178		71.1	59
Reward	3132		56.3	61
a				
Durum				
Kubanka	1440	- i	79.9	61
Mindum ·	. 5296,		79.9	64
Nodak	6519		79.6	62
Notak	0019		79.0	02
777				
DRY LAND				
Durum				
Kubanka	1440		7.3	60
Nodak	6519		5.3	59
Acme	5234		4.3	60
Mindum	5296		2.5	58
11-1-11-11-11-11-11-11-11-11-11-11-11-1	2290		2.0	58
Hard Red Spring				
Marquis	3641		5.1	56
Reward	8182		4.5	57
Норе	3178		4.3	54
Marquis x Hard Federation		708	4.2	53
Reliance	7370	100	4.0	55
	4782			
Champlain	4/82		4.0	55
Ceres	6900		3.6	57
Marquis x Hard Federation		649	3.6	55
Supreme	3026		3.5	55
Marquis x Hard Federation		666	3.3	51
Do		657	3.1	55
Do	(650	653	3.0	50
Marquillo	6337		2.5	55
White				
Federation	4734		2.3	55

Judith Basin Branch Station, Moccasin (Cereal Agronomy, B. B. Bayles) (J. L. Sutherland) [Oct. 15]

The precipitation for the first two weeks in October was far above normal, 1.42 inches being recorded, while the average rainfall for the month is 0.91 of an inch. Temperatures have been normal except for the 15th when the maximum was only 19° above. This temperature was accompanied by a light snowfall and a high wind. Freezing temperatures were recorded on eight of the 15 days. Maximum 61°; minimum 10°; precipitation 1.42 inches.

Heavy rainfall and the present storms have delayed the late seeding of winter wheat.

The following yields were received from a date-of-seeding experiment with Karmont winter wheat, sown with furrow drill. The yields here recorded are averages of four rates of seeding on each date.

Date of seeding and yield (bu. per acre)

The yields from plots seeded with the ordinary surface drill in the same experiment were equal to or larger than those obtained with the furrow drill, owing to the fact that no winterkilling occurred.

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, L. L. Davis)

Agricultural Experiment Station, Moscow (Wheat Improvement, V. H. Florell)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines) (W. K. Smith)

Agricultural Experiment Station, Pullman (Stinking Smuts of Wheat, H. H. Flor)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

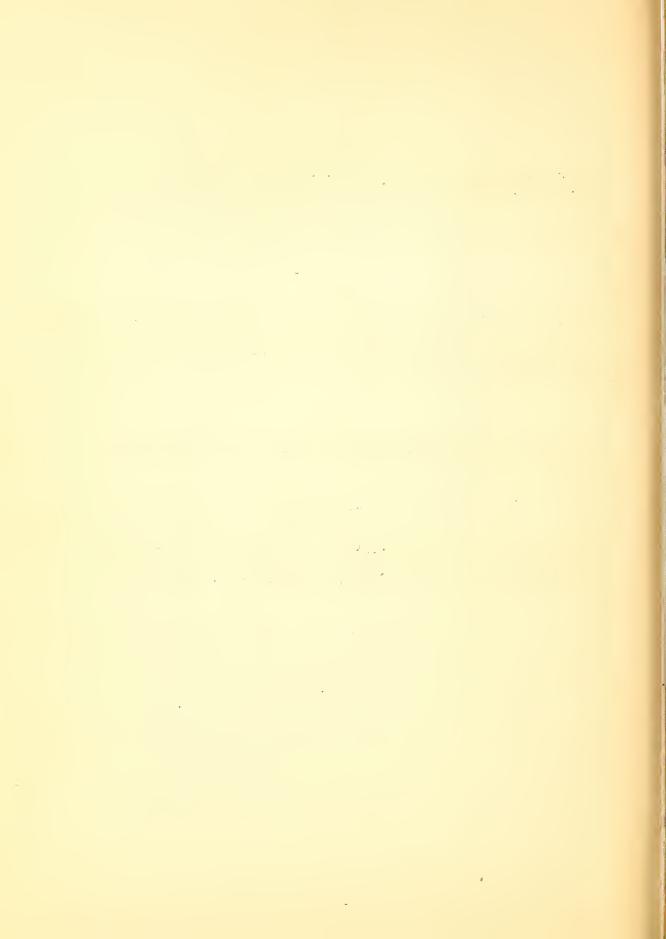
Agricultural Experiment Station, Corvallis (Foot Rots of Wheat, Roderick Sprague)

UTAH

Agricultural Experiment Station, Logan (Wheat Improvement, R. W. Woodward)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)
University Farm, Davis (Cereal Agronomy, G. A. Wiebe)



CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22

October 31, 1930

Fersonnel (Oct. 21-31) and General Issue

No. 27

PERSONNEL ITEMS

- Mr. B. Bayles, formerly assistant agronomist in charge of the cooperative cereal-agronomy experiments at the Judith Basin Substation, Moccasin, Mont., has been transferred to Arlington Experiment Farm, Rosslyn, Va., effective October 16, to assist in the western wheat project. Mr. Bayles' primary responsibility will be to serve in a coordinating capacity in the regional wheat improvement program west of the Rocky Mountains. He also will conduct certain physiological research with wheat.
- Mr. C. E. Chambliss, associate agreeomist in charge of rice investigations, returned to Washington on October 27, after spending five weeks in Texas, Louisiana, Alabama, Georgia, Florida, and South Carolina. At these points he conferred with experiment station officials and others in regard to the testing of Patna and other rices in 1930.
- Mr. Nelson E. Jodon, junior agronomist in charge of the cooperative cereal experiments at the North Platte Substation, North Platte, Nebr., will go to Lincoln, Nebr., about the middle of November, to confer with cooperating Station officials. While there he will write his annual reports and make use of the library facilities of the University of Nebraska. Mr. Jodon will remain in Lincoln until Marsh 10, 1931.

Mr. F. D. Richey, senior agronomist in charge of corn investigations, will leave Washington on November 2 for a 10-day trip to Bloomington, Ill., and Shenandoah, Iowa, to observe the State corn-husking contests to be held at these points.

VISITORS

Mr. G. D. H. Bell has arrived from the University of Cambridge, England, where he is a student of Prof. F. L. Engledow. Mr. Bell expects to spend the greater part of a year in America, most of the time in contact with work in this Office. At Sacaton, Ariz., and Aberdeen, Idaho, he will grow a number of barleys, on which he expects to make observations of varietal characters. He also will assist in taking notes on a large viability planting that is to be made at Sacaton.

MANUSCRIPTS AND PUBLICATIONS

- 69 A manuscript entitled "Inheritance of Smut Resistance and Juiciness of Stalk in the Sorghum Cross, Red Amber X Feterita," by A. F. Swanson and J. H. Parker, was approved October 27 for submittal to The Journal of Heredity.
- 70 A manuscript entitled "Effect of Depth of Seeding on the Occurrence of Covered and Loose Smuts in Winter Barley," by J. W. Taylor and Marion Griffiths Tehner, was approved on October 31 for submittal to The Journal of the American Society of Agronomy.

Galley proof of article entitled "Height of Stubble and Straw Yields of Small Grains," by <u>J. W. Taylor</u> and <u>J. H. Martin</u>, for publication in The Journal of the American Society of Agronomy, was read on October 23.

Page proof of Farmers' Bulletin 1650 entitled "Flaxseed Production by Power-Farming Methods in the Northern Great Plains," by A. C. Dillman and E. A. Starch, was read on October 29.

The article entitled "Host Specialization of Barley Leaf Rust, Puccinia anomala," by E. B. Mains, appears in Phytopathology 20(11): S73-882, figs. 1-3, November, 1930.

The article entitled "Wheat Take-All Symptoms Compared with Injuries Caused by Chinch Bugs," by <u>Hurley Fellows</u>, appears in Phytopathology 20(11): 907-909, figs. 1-2. November, 1930.

Farrers' Bulletin No. 1640 entitled "Fall-Sown/Production," by T. R. Stanton and F. A. Coffman, has been received from the Government Printing Office bearing date of November, 1930.

ADMINISTRATIVE NOTES

Affidavits to Expense Accounts

B.P.I. Memo. 537.

October 27, 1930.

MEMORANDUM TO HEADS OF OFFICES

Gentlemen:

The General Accounting Office has notified the Department that affidavits to expense accounts by clerks designated by the Collector of Customs to administer oaths will not be accepted by him. The Comptroller General has held in effect that the Act of August 24, 1912, and the Act of April 2, 1923, (45 Statutes 401) apply only to employees of the Customs Service and do not permit the administering of oaths to the expense accounts of employees of other branches of the Government Service.

It is requested that this be called to the attention of all employees of your office headquartered in the field where they may have had their expense accounts executed by clerks designated by the Collector of Customs.

Very sincerely,

Wm. A. Taylor

Chief of Bureau.

CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Disease's Eureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22 November 10, 1930 No. 28
Personnel (Nov. 1-10) and Field Station (Oct. 16-31) Issue

NOTICE

Beginning in December the Cereal Courier will appear on the 15th and last days of the month until May, 1931. Contributors of news items will please continue to send their notes on the 15th and last days of each month.

PERSONMEL ITEMS

Mr. Arthur T. Bartel, junior agronomist, has been transferred from the Office of Western Irrigation Agriculture, with headquarters at Bard, Calif., to the Office of Cereal Crops and Diseases, with headquarters at Tucson, Ariz., effective Movember 1. Mr. Bartel will assist in the cooperative cereal-improvement program at Tucson and will conduct experiments particularly on the culture and improvement of wheat. He will have charge of the field experiments at that place and also at outlying points.

Dr. L. F. Randolph, associate cytologist in the cytological and morphological studies of corn conducted cooperatively with the departments of botany and plant breeding of Cornell University, Ithaca, M. Y., attended the meeting of the Committee on the Effects of Radiation on Living Organisms, of the National Research Council, at St. Louis, Mo., on Movember 1. Dr. Randolph also visited the Missouri Agricultural Experiment Station at Columbia, to make a cytological examination of material from Dr. L. J. Stadler's X-ray treatment experiments.

Mr. G. S. Smith, junior agronomist in charge of the cooperative cereal experiments at Langdon Substation, Langdon, N. Dak., has been authorized to come to Washington to confer with project leaders and prepare his annual reports. He will make stops at Fargo, N. Dak., and Minneapolis and St. Paul, Minn., to confer with experiment station officials and others. Mr. Smith will be in Washington until March, 1931.

MANUSCRIPTS AND PUBLICATIONS

71 A manuscript entitled "Wheat Growing in the Southwastern States," by Clyde E. Leighty, was submitted on November 7 for publication as a Farmers' Bulletin. This is a revision of Farmers' Bulletin 885.

Page proof of Circ. 141 entitled "Hardiness and Yield of Winter-Wheat Varieties," by K. S. Quisenberry and J. A. Clark, was read on November 7.

The article entitled "The Nature of Smut Resistance in Certain Selfed Lines of Corn as Indicated by Filtration Studies," by Emery R. Ranker, appears in the Journal of Agricultural Research 41(8): 613-619, figs. 1-3. October 15, 1930.

The article entitled "Influence of Hulling the Caryopsis on Covered-Smut Infection and Related Phenomena in Oats," by T. R. Stanton, F. A. Coffman, V. F. Tapke, G. A. Wiebe, R. W. Smith, and B. B. Bayles, appears in the Journal of Agricultural Research 41(8): 621-633. October 15, 1930.

FIELD STATION CONDITION AND PROGRESS

(All experiments except those conducted at the Arlington Experiment Farm, Rosslyn, Va., are in cooperation with State agricultural experiment stations or other agencies.)

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW JERSEY

Agricultural Experiment Station, New Brunswick (H. B. Sprague)
(Oct. 25)

By informal cooperation with Dr. H. B. Sprague, Agronomist, New Jersey Agricultural Experiment Station, 14 varieties of flax have been grown for three years, 1928-1930, inclusive, at the New Jersey station. The varieties have been grown in single 3-row plots 17 feet long, the rows 1 foot apart, sown at the rate of 20 pounds an acre. The flax has been grown following corn in a 5-year rotation of corn two years, flax, and grass two years.

Commercial fertilizer is applied each year and in addition farmyard manure has been applied before ploying for each corn crop. Linota, Redwing, and Bison have produced the highest average yields. The yields in 1930 and for the 3-year period 1928-1930 are shown in the following table:

Variety.	C.I. Mo.	Yield 1930	(Bu. per acre) 1928-30
M.D.R. 714 Long 56 Long 71 Buda Bison Linota N.D.R. 114 Minn. 281 N.D.R. 726 Red Wing N.D. Nur. 1739 Rio (Long 79) N.D. Nur. 1737 N.D. Nur. 1740	399 337 271 326 389 397 403 408 412 394 341 280 339 342	12.9 15.3 12.5 14.2 17.3 18.1 17.6 15.8 14.4 17.5 15.9	10.2 11.6 11.1 8.9 12.6 15.0 12.1 10.6 9.3 14.0 10.5 10.5

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins)
(Oct. 22)

Weather conditions were very unfavorable for rice harvesting in September. The precipitation was 10.92 inches, only 2.75 inches less than the record rainfall of September, 1913. In September, 1929, the total precipitation was 2.40 inches; the 20-year average is 3.86 inches.

The temperature was about the same as that of September of last year. The very wet weather delayed rice cutting and in many instances forced farmers to harvest in mud and water, or run the risk of a total loss on account of lodging.

The diseased condition of Blue Rose rice caused it to die before full maturity and also to lodge, especially during the heavy rains and wind. In some instances the grain germinated while standing in the field.

By the end of the month nearly the entire crop was in the shock. If wet weather and high temperatures continue much of the grain in the shock will be damaged by heating and sprouting.

In spite of the bad weather and delayed harvest, prices of rice are very unsatisfactory.

Work on the station was hampered by the bad weather. It was necessary for rice in some of the plots to remain on the stubble 8 days before it was in condition to be placed in stacks. Nearly all plots had been harvested by the end of the month. Some cotton still remains to be picked.

Visitors included Mr. Schiniche Kageyama, of Koiwai Farm, Japan, and Mr. A. E. Zaitchih, District Extension Agent of the United States of Soviet Russia.

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

ARKANSAS

Agricultural Experiment Station, Fayetteville (Rice Diseases, E. C. Tullis)

MISSOURI

Agricultural Experiment Station, Columbia (Rice Agronomy, B. M. King)

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

OHIO

Agricultural Experiment Station, Wooster (Corn Investigations, G. H. Stringfield)

IOWA

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, H. C. Murphy)

ILLINOIS

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIAHA

Purdue University Agricultural Experiment Station, LaFayette (Corn Rots and Metallic Poisoning, J. F. Trost, Acting in Charge)

Purdue University Agricultural Experiment Station, LaFayette (Leaf Rusts) (R. M. Caldwell)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, R. G. Shands, Acting in Charge)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, E. R. Ausemus)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman) (M. N. Levine)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, C. C. Allison)

GREAT PLAINS AREA (South to North)

TEXAS

Substation No. 6, Denton (Wheat Improvement, I. M. Atkins)

OKLAHOMA

Southern Great Plains Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (Nov. 5)

The principal work recently has been harvesting sorghum plots and seed heads. The weather in October was favorable for harvesting, but there was little to harvest.

The precipitation for October was 2.56 inches, most of which occurred in the first two weeks. The minimum temperature was 28 degrees on the 31st; the maximum for the last half of the month was 73 degrees on the 25th.

Mr. S. S. Burton has joined the Station staff, in charge of the forestry work.

Dr. M. N. Kuleshov of the Institute of Applied Botany, Leningrad, U. S. S. R., was a Station visitor on November 3.

Southern Great Plains Field Station, Woodward (Wheat Improvement, Edmund Stephens) (Nov. 5)

The winter-wheat varietal plots were seeded October 9 and 10. Preceding rains, and a rain of 0.71 of an inch immediately following seeding, made conditions excellent. The nursery was seeded from October 16 to 21. Good stands were obtained in both the varietal plots and the nursery.

In the combination rate-and-date-of-seeding experiment, seedings were made on September 15, October 1 and 15, and November 1, in fallow ground. On each date, duplicate plots at 2, 4, 6, and 8-peck rates were seeded. With the exception of those seeded November 1, which have not yet emerged, these plots are growing well.

KAMSAS

Agricultural Experiment Station, Manhattan (Coreal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston)

Fort Hays Branch Experiment Station, Hays (Coreal Agronomy, A. F. Swanson)

COLORADO

United States Dry-Land Field Station, Akron (Wheat Improvement, J. J. Curtis)

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, N. E. Jodon) (Nov. 5)

Yields of oat varieties grown in replicated plots at the North Platte Substation, North Platte, Nebr., 1930.

<u>Variety</u>	C. I. No.	Yield (Bu. per acre)
Markton	2053	56.9
Brunker	2054	54.4
Burt	293	53.4
Burt	2491	53.4
North Platte 7(Burt		
Sel. 6076-17)		. 52.8
Fulghum	70g · ·	52.2
Gopher	2027	49.0
North Platte 10(Burt		
Sel. 5220-5)		48.7
Kherson	459	45.9
Nebraska No. 21	841	44.7
Iowar (Check, average		
of five inside plots)	g47	44.7
North Platte 6(Burt		
Sel. 5020-6)		42.5

Agricultural Experiment Station, Lincoln (Wheat Improvement, C. A. Suneson)

SOUTH DAMOTA

United States Field Station, Redfield (Wheat Improvement, E. S. McFadden)

<u>Belle Fourche Field Station, Newell</u> (Beyer Aune) Office of Western Irrigation Agriculture) Nov. 51

· Yields and test weight per bushel obtained from oat varieties grown on irrigated land at the Belle Fourche Field Station, 1930.

Variety	C. I.	Y'eld (3 1. 1 br acre)	Test Weight (Lbs.)
Idamine Markton Rainbow Golden Rain Canadian Silvermine Victory Swedish Select Gopher Sixty-Day Liberty Hull-less White Russian	1834 2053 2045 493 1625 659 560 134 2027 165 845 551	116.1 114.6 110.9 109.4 105.2 104.7 103.6 102.1 101.6 98.9 82.8 77.1	36 36 37 37 36 37 36 32 34 36 35

NORTH DAKOTA

Edgeley Substation, Edgeley (O. A. Thompson) (Nov. 5)

The following yields were obtained from oat varieties grown in replicated plots at the Edgeley Substation, 1930.

<u>Variety</u>	C.I. No.	Yield (Bu. per acre)
Iogold Iowar Anthony Green Russian Sel. (N. Dak. No. 20014) Green Russian Swedish Select Tartarian Big Four Green Russian Sel. (N. Dak. No. 22005) Rainbow (N. Dak. No. 22006) Lincoln Gopher Victory White Russian Cole Richland Twentieth Century Sixty-Day Emmer	2329 847 2147 2343 134 713 658 2344 2345 738 2027 560 551 834 787 2643 165 1526	63.5 63.2 62.7 62.7 61.3 61.3 60.5 59.0 59.0 57.5 56.0 55.2 53.4 48.0 53.2

Worthern Great Plains Field Station, Mandan (Coreal Agronomy, V. C. Hubbard) Thov. 5

Acre yields of oat varieties grown in triplicated 1/50-acre plots at Mandan, N. Dak., 1930.

Variety	C. I. No.	Av. yield (Bu. per acre)
Markton Victory Swedish Select Anthony Logold Golden Rain Edkin Green Pussian Sel. Gopher Green Russian Sel. Rainbow Sixty-Day	2053 560 134 2143 2329 493 2330 2343 2027 2344 2345 165	25.7 19.7 18.5 16.4 15.4 14.8 14.1 12.5 12.1 11.8 9.2 6.1

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (Nov. 1)

Almost continuous fair weather during the last half of October permitted getting the field work all cleaned up. Only 21 rows of flax in the after-ripening-loss experiment remain to be harvested November 15. The harvested nursery flax has all been moved in under cover and most of it is dry enough to thresh.

Exceptionally cold weather the middle of October afforded excellent opportunities to observe the effect of different temperatures on volunteer growing flax. A temperature of 21° on October 15 nipped the tops of plants 5 to 8 inches high but caused no apparent damage to plants 1 to 3 inches high. A temperature of 18° on October 16 injured more plants but failed to kill the smaller plants. A temperature of 13° on October 17 killed nearly all plants, though a few apparently survived until October 20, when all were killed by a temperature of 10°.

Exceptionally high winds prevailed on October 16, 17, and 18. The wind velocity averaged 20.8 miles an hour for the twenty four hours October 17, and 31.1 miles an hour from 8 A. M. to 5 P. M.

The maximum temperature was 63° on October 24; minimum, 10° on October 20. There was only a trace of precipitation.

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith)

An unusually cold spell occurred from October 16 to 20. There were high winds and a few snowsqualls. The ground was frozen solid for a few days. This was followed by warmer weather and now the ground is unfrozen except on colder mornings.

Some winter rye and sweet clover are still being sown in this vicinity.

Varieties of winter wheat and rye in plot experiments are in good condition. The winter nursery shows good stands but the plants are short on account of late emergence.

The total precipitation for October was 1.44 inches, or about 0.60 of an inch above normal for the month. A minimum temperature of 100 was reached during the recent cold period.

The yields obtained from the spring-wheat varieties and hybrids grown in triplicated 3-row blocks in 1930 are presented below.

Acre yields of spring-wheat varieties and hybrids grown in triplicated 3-row blocks on the Dickinson Substation, Dickinson, N. Dak., 1930

<u>Variety</u>	Nursery	C. I. <u>No</u> .	Yield (Bu. per acre)
Hope x Ceres	1096		23.9
Ceres x Hope	1115		23.2
R. R. 147-A	II-23-19		22.8
Marquis x Kota	1656.175		22.3
D. C. Minn. No. 2303	and and meaning		22.3
Cores x Hope	1112		22.3
1656.81 x Hope	2325	and and first page	22.1
Do	2327	100 may part 1000	21.7
Hope x Ceres	1095		21.7
Ceres (Av. of checks)		6900	21,3
1656.97 x Hope	2326	000 may part onto	21.3
Hope x Ceres	1097		21,1
Reliance Sel. 22	dend made and page	into mapping and	21,0

Variety	Nursery <u>No.</u>	C. I. <u>No.</u>	Yield (Bu. per acre)
Ceres x Hope	1108		21.0
Do	1109		20.9
Kota x Webster H-173	1106		20.9
Hope x Ceres Ceres x Hope	1114		20.8 20.4
1656.81 x Hope	2332		20.2
Marquis x Kanred B-9-14-42			20.2
(Kota-H.F) x (KansMq.) 6-4			20.0
Hope x Marquis	1089		. 19.9 -
Hope x. Ceres	1098		19.9
Reliance x Hope	1110		. 19.9
Hope x Ceres	1102		19.6
Do . Apollo .	1105		19,6 19,5
Croesus			19.4
Ceres x Hope	1113		19.3
Mo. Valley Special			19.3
Hope x Ceres	1104		19,2
Do	1100		19,2
1656.81 x Hope	2331		19.1
1656.85 Quality		8385 6607	19.1
1656.48		_ 0007	19.1 18.6
Kota x Kanred B-11-1-1			18,5
Planet			18.5
Hope x Ceres	1107		18.5
Kota z Webster H-209			18.4
Marquis x Surset 5-7-4			18.3
Hope x Marct s	1088		13.3
Hope x Ceres Reliance x Hope	1099 1111	page man dell'appag	18.3 18.2
Reliance Sch. 16			18.1
Hope x Ceres	1101		18.0
Reward		8192	17.8
Cores x Hopo	1123	men and men room	17.7
Do	1157	and the same took	17.7
Marquis x Kanrod 3-9-11-50			17.6
Reliance	1656 d)	7370	17.5
Marquis x Kota Hurdsfield	1656.84	5379	17.2
Kota		- 0219 5878	17.3 17.1
Reliance Sel. 54		J010	17.1
Hope x Marquis	1090		17.0

<u>Variety</u>		Nursery <u>No</u> .	C. I.	Yield (Bu. per acre)
Renfrew			3194	16.7
Reliance Sel. 7	F+ +-		SAS AND ARE ARE	16,5
Garnet	•		8181	16,5
Marquis	A second		3641	16.3
Axminster		and and and and	8195	16,2
Supreme	*** .		8026	15.7
Marquis x Hope	• • =	1093		15,3
Hope x Marquis	****	1091	(mg) were said	15.0
H-44		code construction	8177	14,9
Hope x Marquis	,	1092		14.7
Hope			g1 7 g	13.9
A 3-3-2(Kota-H.F)	x(KansMq.)	\$100 and 0000 (mp)	and extend and	13.8

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Langdon Substation, Langdon (Wheat Improvement, G. S. Smith)

MONTANA

Judith Basin Branch Station, Moccasin (Cereal Agronomy, B. B. Bayles) (J. L. Sutherland)

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, L. L. Davis)(Oct. 24)

The fall has been somewhat unusual in that the first killing frost occurred on September 24. This is about two weeks later than the average date of the first killing frost. The unusually heavy rainfall this season caused much delay in the harvesting of alfalfa seed and potatoes.

The total precipitation in September and to date was 2.1 inches, rain having been recorded on sixteen days.

All nursery and plot threshing was completed early in September. The excessive rain of the summer lowered the quality of the grain to some extent. Oats in particular were badly discolored.

Yield of cereal varieties grown in triplicate 1/40-acre plots at the Aberdeen Substation, Aberdeen, Idaho, 1930.

	Barley	Yield
. Variety	C. I. No.	(Bu. per acre)
Trebi Ezond Beldi Giant Flynn White Smyrna Do Arequipa Hannchen Horn Meloy Faust	936 5064 2777 1311 910 4580 1256 531 926 1176 4579	130.3 124.6 121.4 121.4 117.9 117.3 113.1 103.6 101.4 93.6 76.9
	<u>Oats</u>	
Abundance Markton Victory Vietto Idamine Triumoh No. 20 0.A.G. No. 144 Golden Rain Swedich Select Crown	2038 2053 2020 2010 1834 1793 2235 1718 1627 2022	144.6 144.0 135.5 135.4 130.2 129.6 127.1 . 126.7 124.8

•	Wheat	
Variety	C. I. No.	Yield
<u>VC1 10 0y</u>	<u>U. 1. NO</u> .	(<u>Bu. per acre</u>)
Irwin Dicklow	8855	85.8
Federation.	4734	1 85.3
Onas	6221	85.3
Dicklow	3663	83,2
Early Baart	1697	77.3
Bobs	2826	76,2
Pacific Bluestem	4067	72.1
Supreme	805/4	71.6
Hard Federation	4733	71.2
Marquis	3276	69.8

Agricultural Experiment Station, Moscow (Wheat Improvement, V. H. Florell)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. Gaines) (W. K. Smith)

Agricultural Experiment Station, Pullman (Stinking Smuts of Wheat, H. H. Flor)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

Agricultural Experiment Station, Corvallis (Foot Rots of Wheat, Roderick Sprague)

UTAH

Agricultural Experiment Station, Logan (Wheat Improvement, R. W. Woodward)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones) (Nov. 1)

The weather in October was almost ideal for harvesting and threshing the rice crop. Nearly all rice is now threshed and stored. Yields were higher than expected and the quality of the crop is better than that of last year. The price of rough rice is low, varying from \$1.65 to \$1.90 a hundred, depending on the grade.

Threshing was completed at the Station a few days ago. The yields as a whole, were better than expected. The 40-acre tract purchased this spring produced slightly more than 3800 pounds an acre.

University Farm, Davis (Cereal Agronomy, G. A. Wiche)

ARIZONA

Agricultural Experiment Station, Tucson (Cereal Agronomy, A. T. Bartel)



CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22 November 20, 1930 No. 29
Personnel (Nov. 11-20) and Field Station (Nov. 1-15) Issue

PERSONNEL ITEMS

- Mr. Clyde C. Allison was appointed agent, effective November 12, to assist in the flax investigations conducted in cooperation with the Minnesota Agricultural Experiment Station, University Farm, St. Paul.
- E. C. Chilcott, principal agriculturist in charge of the Office of Dry-Land Agriculture, who passed away at Ann Arbor, Mich., on November 14, was a member of the staff of the Office of Cereal Crops and Diseases in 1905, when it was known as Grain Investigations. Later in the same year he organized the Office of Dry-Land Agriculture. Mr. Chilcott was born in New York State in 1859 and moved to the Territory of Dakota in 1882, where he served as U. S. Deputy surveyor until 1892. He was appointed professor of agriculture at the South Dakota Agricultural College in 1892, and later occupied the positions of professor of geology, agronomist, and vice director of the experiment station. Mr. Chilcott's long service in the Department of Agriculture was most productive in scientific accomplishment, and his death is a decided loss to the Department and American agriculture in general.
- Dr. J. G. Dickson, agent in the cooperative cereal-disease investigations conducted at Madison, Wis., returned to Washington on November 12, having completed his trip through the western European countries, Soviet Russia, and the northern portion of Asia Minor. The summer was spent in the latter countries and the fall in Denmark and Sweden and in the corn areas of southern Europe, especially the Republic of Georgia, the northern Caucasus region, Bulgaria, Jugoslavia, Austria, and Czechoslovakia. Dr. Dickson made special studies of fusarial diseases of wheat, rye, barley, and corn, and succeeded in collecting a considerable series of seed samples of various cereals for study in this country. He also attended the meetings of the International Botanical Congress at Cambridge, England, in August.

- Dr. Dickson will spend 10 days in Washington in consultation with the Principal Agronomist in charge and project leaders regarding future cooperative work at Madison, Wis.
- Mr. C. C. Fifield, associate baking technologist in cooperative baking investigations with the Grain Division of the Bureau of Agricultural Economics, spent the week beginning November 12 in Newark, N. J., and New York, N. Y., where he studied bleaching of flour.
- Dr. Clyde E. Leighty, principal agronomist in charge of eastern wheat investigations in this Office since 1912, was transferred to the Office of Dry-Land Agriculture on November 17 to succeed the late E. C. Chilcott as principal agriculturist in charge.
- Dr. Leighty was born at Billett, Ill., May 7, 1882. He was reared on a farm. He was granted the B. A. degree from the Illinois Wesleyan University in 1904 and his doctorate from Cornell University in 1912. He was connected with the agronomy department of the Illinois Agricultural Experiment Station in 1905.
- Dr. Leighty first served the United States Department of Agriculture in the Office of Grain Standardization, then of the Bureau of Plant Industry, from 1906 to 1909. In 1912 he was appointed on the staff of the Office of Cereal Investigations, now the Office of Cereal Crops and Diseases. Dr. Leighty is sincerely missed, but since he remains in the Bureau, he is not out of touch with Cereal Crops and Diseases.
- Mr. Scott C. McMichael was appointed agent, effective November 4, to assist in the cereal breeding investigations conducted in cooperation with the Washington Agricultural Experiment Station at Pullman.
- Dr. L. J. Stadler, agent in the cooperative corn investigations that are being conducted at Columbia, Mo., arrived in Washington on November 17 to confer with members of the Office staff regarding the cooperative cornbreeding program in Missouri. Dr. Stadler will be in Washington about 15 days.

VISITORS

The following were visitors in the Office during the period from November 12 to 20:

- W. W. Burr, dean and director of the Webraska College of agriculture and Experiment Station.
- L. E. Call, dean of the division of agriculture and director of the Experiment Station of the Kansas State Agricultural College.
 - P. V. Cardon, director of the Utah Agricultural Experiment Station.
- J. S. Cutler, agent in corn investigations cooperative with the Ohio Agricultural Experiment Station and the Ohio State University.
- Dr. C. T. Dowell, director of the Louisiana Agricultural Experiment Station.
- E. J. Iddings, dean of the College of Agriculture, director of Experiment Station, and director of the extension division of the University of Idaho.
- E. C. Johnson, dean of the College of Agriculture and director of the Experiment Station of the State College of Washington.
- R. I. Throckmorton, head of the department of agronomy, Agricultural Experiment Station, Kansas State Agricultural College.
- Dr. Len Verwoerd, a Carnegie Research Fellow, Department of Plant Pathology, University of Stellenbosch, Cape Province, Union of South Africa. Dr. Verwoerd has been visiting for several months at University Fara, St. Paul, Minn., and other experiment stations in the Middle West in connection with his research on cereal pathology.
 - Dr. C. J. Willard of the Ohio State University.
- Dr. M. E. Winters, head of the department of field crops and soils and assistant director of the Agricultural Experiment Station of the Oklahoma Agricultural and Mechanical College.

MANUSCRIPTS AND PUBLICATIONS

73 A manuscript entitled "Inheritance in a 'Constant' Hybrid Between Acgilops ovata and Triticum dicoccum," by J. W. Taylor and C. E. Leighty, was submitted on November 17 for publication in the Journal of Agricultural Research.

The following 10 abstracts of papers for presentation before the American Phytopathological Society at its meetings in Cleveland during Christmas week were approved on November 11 and will be published in Phytopathology:

- 74 Host Specialization and Parasitism of the Genus Rhynchosporium, by R. M. Caldwell.
 - 75 Indications of Heterothallism in Tilletia tritici, by H. H. Flor.
- 76 Progress Report on Cold-Injury Studies, by J. R. Holbert and W. L. Burlison.
- 77 A Synthetic Production of <u>Puccinia graminis</u> <u>hordei</u> F. and J., by M. N. Levine and R. U. Cotter.
- 78 Four Apparently Undescribed Mosaics which go to Tobacco, by H. H. Jaclinney.
 - 79 Further Studies on Virus Purification, by H. H. McKinney.
- 80 Plastid Pigment and Chlorophyllase Contents of Tobacco Plants as Influenced by Three Types of Mosaic, by P. D. Peterson.
 - 81 Relation of Seed Quality to Yielding Ability and Disease Resistance in Hybrid Strains of Dent Corn, by R. R. St. John and J. F. Trost.
 - 82 Progress Report on Corn Stalk-Rot and Ear-Rot Studies, by A. L. Smith and J. R. Holbert.
 - 83 Studies on Resistance in Sweet Corn to <u>Diplodia zeae</u>, by <u>G. M. Smith</u> and <u>J. F. Trost</u>.

84 An abstract of a brief paper entitled "Some Genetic Effects of Electro-Magnetic Treatment in Maize," by G. F. Sprague, was approved on November 11 for submittal to the Joint Genetic Sections of the American Society of Zoologists and the Botanical Society of America for their program in Cleveland during Christmas week.

The following seven abstracts were approved for submittal to the American Society of Plant Physiologists for its program during the meetings of the American Association for the Advancement of Science and Affiliated Societies at Cleveland, Ohio, during Christmas week:

- 85 Light and Temperature Studies on Wheat, by H. H. McKinney and W. J. Sando.
- 86 Relations of Genetic and Induced Barrenness to the Development and Composition of Dent Corn, by J. F. Trost, L. P. Miller, and R. A. Weaver.
- 87 Relations of Potassium Supply to Function and Composition of Dent Corn, by J. F. Trost, L. P. Miller, and R. A. Weaver.
 - 88 Determination of Bound Water in Plant Tissue, by J. D. Sayre.
 - 89 Preliminary Studies on the Physiology of Corn, by J. D. Sayre.
- 90 Methods of Determining Moisture Content of Corn Tissues, by V. H. Morris.
- 91 The Determination of Glucose-Fructose Ratio in Corn Tissue, by V. H. Morris.

These abstracts will be published by Science Service, Inc.

92 An abstract of a paper entitled "Experiments on Hybrid Vigor and Convergent Improvement in Corn," by F. D. Richey and G. F. Sprague, was approved on November 15 for presentation before the Geneticists Interested in Agriculture and the American Society of Agronomy at their joint session in Cleveland, Ohio, December 29.

- 93 An abstract of a paper entitled "Induced Mutations in Cereal Breeding," by L. J. Stadler, was approved November 20 for presentation before the American Society of Agronomy in Washington, D. C., November 20.
- 94 A menuscript entitled "The Influence of Humidity on Floral Infection of Wheat and Barley by Loose Smut," by <u>V. F. Tapke</u>, was submitted on November 20 for publication in the Journal of Agricultural Research.

Galley proof of the article entitled "The Comparative Drought Resistance of Sorghums and Corn," by John H. Martin, for publication in the Journal of the American Society of Agronomy, was read on November 12.

Page proof of Circular No. 133 entitled "Methods of Eradicating Buckthorn (Rhamnus) Susceptible to Crown Rust (<u>Puccinia coronata</u>) of Oats," by S. M. Dietz and J. D. Leach, was read on November 14.

The article entitled "Height of Stubble and Straw Yields of Small Grains," by J. W. Taylor and J. H. Martin, appears in the Journal of the American Society of Agronomy 22(11): 963-967, figs. 1-2. November, 1930.

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AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE AND AFFILIATED SOCIETIES

December 29, 1930, to January 3, 1931

A number of the members of the Office of Cereal Crops and Diseases are planning to present papers before societies participating in the 87th annual meeting of the American Association for the Advancement of Science to be held in Cleveland, Ohio, December 29, 1930, to January 3, 1931.

Ten papers by members of the Office are to be presented before the meeting of the American Phytopathological Society.

Seven papers will be presented before the American Society of Plant Physiologists.

One paper will be presented before the Joint Genetic Sections of the American Society of Zoologists and the Botanical Society of America.

Abstracts of these papers are listed on pages 343 and 344 of this issue of the Cereal Courier.

FIELD STATION CONDITION AND PROGRESS

(All experiments except those conducted at the Arlington Experiment Farm, Rosslyn, Va., are in cooperation with State agricultural Experiment stations or other agencies.)

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor) (Nov. 17)

Germination of fall-sown grains has begun. The stands in the plots and nursery are extremely spotted at present. Barley and oats seeded over six weeks ago are more retarded in germination than wheat sown the last week in October.

Greenhouse space is being rapidly occupied by the various projects of the Office of Cereal Crops and Diseases. Approximately the same space is being used, but more intensive use is being made of it because of certain genetic studies of seedlings, particularly of oats.

Rainfall for the first 17 days of November totalled 0.51 of an inch. During the period from November 13 to 17, 0.33 of an inch fell, sufficient at least to start germination. The minimum temperature for the period from November 1 to 17 was 21 degrees, recorded on November 7 and 8.

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LOUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins) (Nov. 17)

Weather conditions in October were about normal. The total precipitation was 3.06 inches. Last October it was 3.28, and the average for the past 20 years was 3.95.

The temperatures were somewhat lower than those of last October. The absolute maximum was 86° F. and the absolute minimum, 38° F., while last year they were 88° and 41° respectively.

Field operations did not progress satisfactorily the greater part of October because of the wet fields at cutting timo, and the lack of real good drying weather to put rice into proper condition for threshing.

The rice harvest on the Station was completed, and threshing commenced. Cotton harvest was completed, and the crop ginned. Soybean harvest was begun. The indications are that there will be a satisfactory yield of beans.

Much threshing has been done under untavorable conditions, resulting in a poor quality of grain. The diseased condition of most of the crop also caused a decided reduction in yield and quality.

On October 16 a visit was made to the rice fields in the vicinity of Beaumont, Tex., to observe the combine harvesting of rice in muddy fields. Owing to the character of certain soil it was found impossible to operate the combine with an ordinary tractor when the fields were partly dry. The soil adhered to the wheels, causing them to lock. Where the fields were almost flooded with water the tractor wheels were kept clean and the operation was fairly satisfactory. The caterpillar type of tractor was more satisfactory in the sticky soil than the ordinary wheel type. It would seem that under such conditions it would be better to mount the combine on skids than wheels.

Dr. N. I. Vavilov, Director of the Institute of Applied Botany, Leningrad, U. S. S. R., was a visitor on October 1. Mr. Chas. E. Chambliss was at the Station from October 7 to 11, inclusive. Dean C. T. Dowell was a visitor on the 14th.

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

ARKANSAS

Agricultural Experiment Station, Fayetteville (Rice Diseases, E. C. Tullia)

MISSOURI

Agricultural Experiment Station, Columbia (Rice Agronomy, B. M. King)

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

OHIO

Agricultural Experiment Station, Wooster (Corn Investigations, G. H. Stringfield)

AWOI

Agricultural Experiment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Oats, H. C. Murphy)

ILLINOIS .

Funk Bros. Seed Co., Bloomington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, LaFayette (Corn Rots and Metallic Poisoning, J. F. Trost, Acting in Charge)

Purdue University Agricultural Experiment Station, LaFayette (Leaf Rusts, R. M. Caldwell)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

MINNESOTA

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, E. R. Ausemus)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman) (M. N. Levine)

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, C. C. Allison)

GREAT PLAINS AREA (South to North)

TEXAS

Substation No. 6, Denton (Wheat Improvement, I. M. Atkins)

OKLAHOMA

Southern Great Plains Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger) (Nov. 15)

The weather of the first half of November was favorable for har-vesting sorghums and for seed selection. The grain sorghums are har-vested and the baskets of heads are under shelter. Seed heads have been selected from most of the plantings, and the outside work on the project is about completed for the winter.

The precipitation for the first half of November was 0.13 of an inch; the minimum temperature for the same period was 25° on the 6th; maximum, 77° on the 14th.

Southern Great Plains Field Station, Woodward (Wheat Improvement, Edmund Stephens)

KANSAS :

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston) (Nov. 12)

Fall work in connection with leaf-rust investigations is progressing in a very satisfactory manner. Uniform leaf-rust nurseries, consisting of 84 winter wheats, have been sown at agricultural experiment stations in 12 States. A nursery of 709 eight-foot rows, 582 heads rows, and 700 rows of spaced-sown hybrids was sown at Manhattan. All sowings have emerged and made sufficient growth to enter the winter in vigorous condition.

The last two weeks of October and the first 12 days of November have been marked by unusually warm, dry weather. Satisfactory rains in the middle of October, brought up fall-sown wheat in excellent stands. Since that time fair weather has prevailed. As a consequence of the dry weather fall infections of both leaf and stem rusts are very slight. On October 23 a small percentage of leaf rust was found on the lower leaver of early-sown wheat, and some stem rust was found on volunteer wheat. There has been only a very slight increase in the percentage of leaf rust, and stem-rust infection is rapidly disappearing. Recent frosts have had a marked drying effect on uredinia of stem rust, and pustules that were producing spores vigorously a few days ago seem to have dried up.

Leaf-rust experiments in the greenhouse are now well under way. Experiments on the effect of leaf-rust infection on the water economy of winter wheat and on the distribution and prevalence of physiologic forms are receiving particular attention at present. More than 100 collections of leaf rust were made in the United States in 1930 and already many have been sown on susceptible hosts to establish foundation cultures. A collection made in the leaf-rust nursery this fall has been tested and found to consist of physiologic form 9 with a very slight mixture of another form as yet unidentified.

Fort Hays Branch Experiment Station, Hays (Coroal Agronomy, A. F. Swanson)

COLORADO

United States Dry-Land Field Station, Akron (Wheat Improvement, J. J. Curtis)

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, N. E. Jodon)

Agricultural Experiment Station, Lincoln (Wheat Improvement, C. A. Suneson) (Nov. 15)

The prospects for an average winter wheat crop in this section are not satisfactory as the rainfall for the year is more than 9 inches below normal. Only 0.37 of an inch has been recorded since September 15. In addition to this moisture deficiency there is a threat of considerable Hessian-fly damage.

Unifrom stands were obtained in all nursery seedings despite the absence of rain. The wheat has not made much growth, however. Rather cold weather for about a week, with a minimum temperature of 20° F. on October 21, caused considerable leaf injury, especially to wheats sown before October 1. In the case of Nebraska No. 60, it was estimated that 60 per cent of the leaves showed killing of 2 inches or more of the leaf tips. Varieties that were more prostrate at that time were injured less. Hardly any new growth has been made by these wheats since the injury occurred.

Very favorable reports, indicating abundant moisture and good fall growth, have come in concerning the wheat varietal tests at the Box Butte and Valentine (Nebr.) branch experiment stations.

SOUTH DAKOTA

United States Field Station, Redfield (Wheat Improvement, E. S. McFadden) (Nov. 13)

Average yields, percentage of stem rust, and test weights of spring-wheat varieties grown in field plots are presented in Table 1. The varieties were grown in triplicate, one series on fall plowing, one on light soil on fallow, and one on gumbo soil on fallow. The series on fall plowing and on light soil on fallow were severely injured by soil blowing. The varieties appeared to be injured about equally with the exception of Marquis x Kota 1656.85, which was injured much less than any of the others. This was very clearly due to a peculiar natural resistance of this variety to soil blowing. The stands of Marquillo and Marquis x Kota 1656.48 on opposite sides of 1656.85 were reduced to 50 per cent by soil blowing, whereas the stand of 1656.85 was reduced only barely enough to be noticeable.

Another outstanding feature of the varietal experiment this year was the low test weights and low yields of Hope and H-44. The low test weights and low yields of these varieties were very clearly the result of heat injury in July. Both these varieties looked very promising up until the heat wave of July set in. The maximum temperatures on 17 days in July varied from 100 to 110 degrees. The mean maximum for the month was 98 degrees. Hope and H-44 were the first varieties to show the injurious effects of these extreme temperatures. In the highaltitude section of the "Lake Region" of northeastern South Dakota, where the maximum temperatures for July did not exceed 100 degrees, Hope wheat made an excellent showing again this year. Yields of 20 to 30 bushels an acre of 58 to 62-pound wheat appear to have been the rule for Hope wheat in that section of the state. On the other hand, all reports received from farms in the "torrid" section of the James River Valley and all points west of the Missouri River indicate that Hope wheat was a complete fizzle this year as a result of heat injury.

That Nope wheat is very susceptible to heat injury is evident from an examination of Table 2 which shows the mean maximum temperatures for July, 1930, and the test weights and yields of Hope wheat at six points in South Dakota. The test weight and yield for the Webster section is from the farm of Olaf Tornes in the vicinity of the Weather Bureau station near Roslyn.

The quality and yield of Hope wheat were also reduced by heat injury at the Redfield station in 1929, whereas at Brookings and Ardmore, where the July temperatures were lower, Hope produced comparatively good yields. It is noteworthy that Hope wheat made its best showing in 1927 when the temperatures for July were below normal in many sections.

It was observed at this station in 1929 that Hope and H-44 were somewhat more susceptible to frost injury than most varieties. This peculiar susceptibility to both high and low temperatures also was observed in 1929 in many of the selections of both Hope and H-44. Since these defects appear to be hereditary, it might be worth while to subject the promising selections of these two wheats to special laboratory heat and cold tests before they are distributed for commercial growing. It is only on rare occasions that reliable data on resistance to heat and cold in spring varieties can be obtained under field conditions.

Table 1. Average yield, percentage of stem rust, and test weights of spring-wheat varieties grown in triplicate 1/50-acre plots at the U. S. Field Station, Redfield, S. Dak., 1930.

Variety	C.I. No.	Stem Rust (Per cent) (Yield Bu. per acre)	Test Weight (Lbs. per bu.)
Hard Red Spring				
Marquis x Kota, 1656.85	8004	0	12.3	54
Ceres	6900	0	9.0	54 54
Double Cross, Minn. 2303		0	9.0	51 54
Marquis x Kota, 1656.48	10014	0	8.7	54
Reward	8182	T	8.3	57
Reliance	7370	T	8.3	54
Kota	5878	0	7.4	57 54 54 51 50 47
Marquillo	6887	0	7.2	51
Supreme H-44	8026	T	6.8	50
	8177	0	6.2	47
Marquis	3641	T	6.1	51 54 44
Double Cross, Minn. 2305		0	5.7	54
Hope	8178	0	4.9	44
Power	3697	T	4.1	53
Durum				
Akrona	6881	0	9.0	55
Acme	5284	0	9.0	55
Mindum	5296	O	8.6	55
Nodak	6519	0	. 7.5	55
Kubanka	1440	0	7.4	52
White				
Quality	6601	T	6.7	55

Table 2. Mean maximum temperatures for July, 1930, and test weight and yield of Hope wheat grown on dry land at six points in South Dakota.

Station	Mean max. Temperature	Test Weight (Lbs. per bu.)	Yield (Bu. per acre)
Redfield	98.0	44	4.9
Ardmore	94.5	45	7.5
Highmore	94.3	47	15.1
Eureka	93.8	52	13.9
Brookings	91.8	55	15.8
Webster	85.5	60	28.0

NORTH DAKOTA

Hettinger Substation, Hettinger (C. H. Plath) (Nov. 1)

Yields and test weight per bushel obtained from spring-wheat varieties grown in triplicate plots at the Hettinger Substation, Hettinger, 1930.

Class and Variety	C. I. <u>No.</u>	Yield (<u>Bu. per acre</u>)	Test Weight (Lbs.)
Hard Red Spring Supreme Reward Ruby Ceres Marquis x Kota 1656.48 Garnet Marquis x Kota 1656.84 Marquis x Kota 1656.85 Double Cross, Minn. 2303 Marquillo Marvel Reliance Hope Montana King Marquis Kota		23.3 23.3 21.4 20.7 20.0 20.0 19.7 19.7 18.3 18.1 17.9 16.9 16.4 16.2 15.5 14.1	51 55 55 55 55 55 54 55 55 55 55 55 55 55
White Quality Axminister	6607 8195	21.9 18.4	57 51
Durum Pentad Mindum Nodak Kubanka N.D.R. 216	3322 5296 6519 1440	20.5 18.3 16.8 16.5 16.4	58 56 55 . 56 514

Edgeley Substation, Edgeley (O. A. Thompson) (Nov. 1)

Yields, percentage of stem rust, and test weight per bushel of springwheat varieties grown in triplicate plots at the Edgeley Substation, Edgeley, 1930

Class and Variety	C.I. <u>No.</u>	Stem Rust (Per cent)	Yield (Bu. per acre)	Test Weight (Lbs.)
Hard Red Spring Double Cross, Minn. 2305 Double Cross, Minn. 2305 Marquis x Kota 1656.85 Marquis x Kota 1656.84 Marquillo Marquis x Kota 1656.48 H-44 Ceres Hope Marvel Kota "Whiteman" Reliance Reward Marquis Montana King Garnet Supreme		18 13 30 48 18 25 Tr 58 0 83 50 68 78 80 70 78 75 83	27.0 25.8 24.6 23.8 23.8 22.6 22.6 21.8 20.6 19.4 18.6 17.8 16.2 16.1 14.5 11.3 8.9	61 55 55 55 55 55 55 55 55 55 55 54 47
White Quality	6607	70	16.5	53
Durum Monad Pentad Akrona Nodak Kubanka Kubanka Sel. 132 N.D.R. 211 N.D.R. 216 Mindum	3320 3322 6881 6519 1440 5296	2 Tr 28 8 13 13 30 8	27.8 27.6 27.2 27.2 25.6 25.6 24.8 24.6 23.0	61 62 62 60 61 61 62 62 63

Northern Great Plains Field Station, Mandan (Cereal Agronomy, V. C. Hubbard)

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.)

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (Nov. 15)

The weather has been calm and mild for most of the first half of November. The maximum temperature was 72 degrees on the 5th and the minimum 15 degrees on the 5th and 6th. Only a trace of precipitation was recorded. The ground was frozen only after the very cold nights.

The winter-wheat nursery added about an inch to its height, being now about two inches high and having good stands in nearly all rows.

The seed from varietal plots has been cleaned and stored for the winter. Progress is being made with the annual cereal report.

The following tables show the yields of flax varieties and safflower grown in replicated plots in 1930 and the average annual yields of spring-wheat varieties in percentages of the annual yield of Marquis for comparable years.

Acre yields of flax varieties and safflower grown in triplicated 56th-acre plots on the Dickinson Substation, Dickinson, 1930

Variety	C. I. No.	Yield (Bu. per acre)
Siberian No. 206 Redwing Newland N.D.R. 52 Bison Rio (Long 79) N.D.R. 114 Linota Buda N.D. 40,034 Hybrid 19 x 112 N. D. 40,046 Safflower	473 320 188 490 389 280 489 244 326 491 383 492	5.1 4.9 4.1 4.0 4.0 3.8 3.6 3.5 3.6 1.5 0.7 8.0

^{1/} Computed at 40 pounds per bushel instead of 56 pounds as with flax varieties.

Average annual yields of hard spring wheat varieties grown in replicated plots on the Dickinson Substation in comparison with average yields of Marquis for comparable years.

<u>Variety</u>	C.I. No.	No. Years compared	Yield in percentage of Marquis
Marquis x Kota(1656.97) Ceres Reliance Sel. 16 Reliance Supreme Garnet Reward Kota Marquis x Kota(1656.34) Progress Preston Power Quality Marquis x Kota(1656.55) Hope Ruby Marquillo Red Fife Haynes Bluestem	8005 6900 7370 8026 8181 8182 5878 8004 6902 3081 3697 6507 8385 8178 6047 6837 3329 2874	5 8 3 7 4 5 3 11 5 8 8 8 3 3 1 6 8 8 18 8 18 8 18 8 18 8 1	117.8 117.6 112.3 108.6 107.8 107.5 106.8 104.8 100.0 99.4 98.8 97.0 97.0 97.0 97.0 97.0 97.0 97.0

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

North Dakota Agricultural Experiment Station, Fargo (T. E. Stoa)
[Nov. 1]

The following results were obtained from the varietal experiments with spring wheat in 1930. Much of the rust came too late to do much damage, which explains many high yields in spite of high rust readings.

Yield, percentage of stem rust, and test weight per bushel obtained from spring-wheat varieties grown in triplicate 1/44-acre plots at the North Dakota Agricultural Experiment Station, Fargo, N. Dak., 1930

Class and Variety	C.I.	Stem Rust	Yield	Test Weight
77 . 7 70 - 7 0	No.	Per cent	(Bu. per acre)	Lbs.
Hard Red Spring	77.70	0.0	lin o	(2.0
Reliance	7370	90	41.9	61.0
Ceres	6900	25	7+J • 7+	61,8
Marquis x Kota 1656.85	8385	2	41.1	61,6
Marquis x Kota 1656.48	10014	3	41.0	61.8
Marquis x Kota 1656.84	800 1	25 3 3 4 5 75	40.4	61.5
Double Cross, Minn. 2303	10003	5	39.2	60,9
Power	3697		38.8	60.3
Double Cross, Minn. 2305	10005	18	38.0	62,6
Marquis	3641	75	38.0	61.5
Kota	5878	8	37,2	62.3
"Whiteman"	8379	35	37.1	60.9
Supreme	8026	g0 	36.6	59.9
Montana King	8878	75	36.1	59.8
Preston	3081	55	36.1	61.3
Garnet	8181	45	34.2	61,9
Bolley 132		45	34.1	61,4
Hope x 1656.81 N.S. 2325		Tr	33.9	59.6
Marquillo	6887	8	33.9	59.6
Progress	6902	30	33.5	61.8
Marvel	8876	20	33.3	62.3
Hope	8178	Tr	33.1	58.0
Reward	8182	1 0	31.9	63.5
H-J+J+	8177	Tr	30.5	59•2
White		-1 -	_1, ' _	Ca
Axminister	8195	80	34.2	60.0
Quality	6607	740	33.0	61.5
Durum	Caas		h= h	(7.7
Akrona	6881	20	45.4	63.1
Mindum	5296	3 2	111.7	63.1
N.D.R. 216	040	2	44.1	61.8
Kubanka Sel. 132		2	43.6	63.0
Nodak	6519	2	43.6	61,8
D-116		1	43.3	62.2
Kubanka	1440	10	42.9	62.3
Monad (D-1)	3320	Tr	42.0	62.1
Pentad (D-5)	3322	0	41.5	61.9
N.D.R. 211		10	j+0•0	63.3

Williston Substation, Williston (E. G. Shollander) (Nov. 1)

Yield and test weight per bushel obtained from spring-wheat varieties grown in triplicate plot experiments on fallow land at the Williston Substation, Williston, N. Dak., 1930

Class and Variety	C. I.	Yield (Bu. per acre)	Test Weight (Lbs.)
Hard Red Spring			
Garnet	81.81	24.4	57.0
Reward	8182	21.6	59.5
Reliance	7370	21.6	57.0
Ruby	6027	21.4	58.0
Supreme	8026	20.2	59.0
Double Cross, Minn. 2303	10003	19.8	54.5
Ceres	6900	19.5	56.0
Marquis x Kota 1656.85	8385	19.3	57.0
Marquis x Kota 1656.84	g004	19.1	58.0
Renfrew	g194	1g.g	54.0
Marquis x Kota 1656.48	10014	10.5	57.5
Marquillo	6887	18.2	54.0
Kota	5878	17.4	57•5
Marquis	3641	17.1	55.0
Marquis (Mitchell)		17.1	56.5
Montana King	8878	16.7	54.0
Hope	8178	13.1	52.0
	0210	-5)0
Durum			
Nodak	6519	27.1	56.0
Monad	3320	22.3	58.0
Kubanka	1440	21.4	58.0
Mindum	5296	1ರ.1	55.0

Langdon Substation, Langdon (Wheat Improvement, G. S. Smith) (Nov. 19)

In the following tables are shown the yield, test weight, and percentage of stem-rust infection of the more promising hard-red-spring-wheat hybrids in comparison with standard varieties grown in rod-row nurseries. It will be noted that under the conditions of the severe natural rust epidemic at Langdon this season, a large number of hybrid selections grown in both the triple 3-row and single rod-row nurseries were superior to the standard varieties. Although the hybrids listed were not entirely free from rust, as were Hope and H-44, many were almost immune and all were more strongly resistant than Ceres. The test weights and yields show a sharp reduction with the increase in percentage of rust.

In Table 1 the yields of the standard varieties grown in 3-row blocks rank in almost an inverse relation to their respective rust infection.

Marquillo produced a considerably higher yield and test weight than Ceres with the same appearent rust infection. Marquis was severely damaged with 75 per cent of rust and produced only 8.3 bushels an acre, with a bushel weight of 43 pounds. Ceres with 25 per cent of rust produced 17.3 bushels an acre, with a bushel weight of 58 pounds.

In both nurseries Ceres was significantly less damaged by rust than was Marquis.

In Table 2 the yields of the new hybrids show a considerable variation. Most of these differences must be attributed to factors other than rust reaction.

Table 1. Stem-rust infection, test weight, and yield per acre of some of the hard-red-spring-wheat hybrid selections and standard varieties grown in triplicated 3-row nursery experiments at Langdon, N. Dak., 1930

Variety or cross	Nursery No.	C.I.No.	Stem Rust (Per cent)	Test Weight (B (Lbs.)	Yield u. per acre
Marquis x Kota 1656.106 Marquis - Emmer x Kanred- Marquis 1656.81 x Hope Marquis x Kota 1656.85 1656.81 x Hope Marquis - Emmer x Kanred- Marquis Kota x Webster Do 1656.97 x Hope 1656.81 x Hope Double Cross (Minn.) Do 1656.81 x Hope	I-24-14 1087 2327 2325 1086 H-151-25 H-209-25 2326 2332 II-21-80 II-21-86 2331	8385	10 T 15 T 10 5 1 15 15 15	58.5 58.5 57.5 57.5 57.5 57.5 57.5 57.5	35.7 32.1 30.3 30.2 29.8 29.6 29.3 29.3 29.3 28.9 28.9 28.9 28.9
Hope H-44 Marquillo Marquis x Kota 1656.48 Kota Ceres Reward Marquis Supreme Reliance		8178 8177 6887 10014 5878 6900 8182 3641 8026 7370	0 0 25 15 20 25 55 75 60 55	58.5 58.5 59.5 57.5 55.0 58.0 57.0 43.0 39.0	25.0 23.5 23.3 21.8 17.8 17.3 14.3 8.3 4.8

Table 2. Stem-rust infection, test weight, and yield per acre of some of the hard-red-spring-wheat hybrid selections and standard varieties grown in triplicated single-row nursery experiments at Langdon, N. Dak., in 1930

Cross and variety	Nursery No.	Stem Rust (Per cent)	Test weight (Lbs.)(Yield Bu. per acre)
Hope x Ceres Do Do Kota x Webster Hope x Ceres Marquis-Emmer x Kanred-	1098 1104 1096 H-81-25 1099	2 2 30 25 3	57.0 57.5 57.5 60.0 58.0	32.3 31.3 30.7 30.5 30.4
Marquis Marquis x Kota 1656.6 Reliance x Hope Hope x Ceres Do Do Do Do Do Do Do	1080 1110 1107 1101 1109 1095 1097 1106 1127	15 30 2 5 3 5 15 3 0-30 2	57.5 60.5 57.5 55.5 55.5 57.5 57.5 57.5	29.5 29.1 28.6 27.9 27.7 27.3 26.9 26.7 26.7
Ceres (C.I.No. 6519) (av Marquis (C.I. NO. 3641)(52.4 45.0	17 . 9 5.8

MONTANA

Judith Basin Branch Station, Moccasin (Cereal Agronomy, J. L. Sutherland)

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO .

Aberdeen Substation, Aberdeen (Cereal Agronomy, L. L. Davis)

Agricultural Experiment Station, Moscow (Wheat Improvement, V. H. Florell)

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines) (W. K. Smith)

Agricultural Experiment Station, Pullman (Stinking Smuts of Wheat, H. H. Flor)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

Agricultural Experiment Station, Corvallis (Foot Rots of Wheat, Roderick Sprague)

WYOMING

Cheyenne Experiment Farm, Cheyenne (A. L. Nelson) (Oct. 25)

Yield and test weight per bushel obtained from spring-wheat varieties grown in quadruplicate 1/52-acre plots at the Cheyenne Experiment Farm, Archer, 1930

Class and Variety	C. I. No.	Yield (<u>Bu. per acre</u>)	Test Weight (Lbs.)
Hard Red Spring Kota x Galgalos, Sel. 59 Hope H-44 Reliance Ceres Reward Erivan Marquis x Erivan A-1-9-1 Kota x Galgalos, Sel. 3-26 Kota x Galgalos, Sel. 1-26 Marquis x Erivan B-4-25-2 Marquillo Marquis Kota x Galgalos, Sel. 60 Supreme Garnet	8178 8177 7370 6900 8182 2379 6887 3641 8026 8181	8.4 7.4 7.66.3 6.1 6.6 6.5 5.7 4.6 5.9 3.9 3.9	62692231106361998 555655555555555555555555555555555555
White Dicklow x Sevier 14-85 Kota x Galgalos, Sel. 2-26 Kota x Galgalos, Sel. 14 Kota x Galgalos, Sel. 41	 	9.6 ·g.2 g.0 7.3	59 61 59 55
Durum Mindum Kubanka Nodak Kubanka Golden Ball Sel. Akrona Acme	5296 1440 6519 1516 6831 5248	9.3 5.8 8.5 8.2 8.1 7.9 7.7	62 60 60 62 62 62 60

UTAH

Agricultural Experiment Station, Logan (Wheat Improvement, R. W. Woodward)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)
University Farm, Davis (Cereal Agronomy, G. A. Wiebe)

ARIZONA

Agricultural Experiment Station, Tucson (Cereal Agronomy, A. T. Bartel)





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Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, W. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22

November 30, 1930 Personnel (Nov. 21-30) and General Issue Mo. 30

PERSONNEL ITEMS

Mr. Donald J. Martin was appointed junior supervisor of grain inspection, effective September 20, in connection with the milling and baking investigations that are being conducted by this Office in cooperation with the Grain Division of the Bureau of Agricultural Economics

Dr. L. J. Stadler, agent in the cooperative corn investigations at Columbia, Mo., who arrived in Washington on November 17 to confer with members of the Office staff regarding the cooperative corn-breeding program in Missouri, left on November 27 for Ithaca, N. Y., to confer with Dr. L. F. Randolph and Dr. R. A. Emerson in regard to cooperative genetical and cytological investigations with corn. He will remain in Ithaca four days and return from there to Columbia.

Mr. Edmund Stephens, junior agronomist in charge of the cooperative wheat-improvement experiments at the Southern Great Plains Field Station, Woodward, Okla., arrived in Washington on November 23 to confer with members of the Office staff and prepare his annual report. Mr. Stephens will remain in Washington about three months.

MANUSCRIPTS AND PUBLICATIONS

- 95 A manuscript entitled "The Parasitism of Gibberella saubineTii on Corn Seedlings," by Norma L. Pearson, was submitted on November 26 to the Journal of Agricultural Research.
- 96 An Abstract of a paper entitled "The Frequency of Mutation of Specific Genes in Maize," by <u>L. J. Stadler</u>, was approved on November 26 for submittal to the Joint Genetic Sections of the American Society of Zoologists and the Botanical Society of America for their program in Cleveland during Christmas week.
- 97 A brief manuscript entitled "Registration of Improved Wheat Varieties, V," by J. Allen Clark, was approved on November 21 for submittal to The Journal of the American Society of Agronomy.

Galley proof of Technical Bulletin No. 218 entitled "Inheritance of Winter Hardiness, Growth Habit, and Stem-Rust Reaction in Crosses Between Minhardi Winter and H-44 Spring Wheats," by Karl S. Quisenberry, was read on November 28.

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The article entitled "Heterothallism in <u>Puccinia coronata</u>," by Ruth F. Allen, appears in Science 72 (1873): 536. November 21, 1930

AMERICAN SOCIETY OF AGRONOMY

Officers, 1930-1931

President. Dean and Director William W. Burr, Nebraska College of Agriculture and Experiment Station.

lst Vice President. Dr. Arthur B. Beaumont, Head of the Department of Agronomy, Massachusetts Agricultural College and Experiment Station.

2nd Vice President. Dr. Selman A. Waksman, Microbiologist of the New Jersey College of Agriculture and Experiment Stations.

3d Vice President. Dr. George Stewart, Professor of Agronomy, Agricultural College of Utah and Agronomist, Utah Agricultural Experiment Station.

4th Vice President. Prof. R. I. Throckmorton, Head of the Department of Agronomy, Kansas State Agricultural College, Manhattan, Kans.

<u>Secretary-Treasurer</u>. Dr. Percy E. Brown, Professor of Soils and Chief Soil Chemist and Bacteriologist, Iowa State College and Experiment Station.

Editor. Prof. James D. Luckett, Editor, New York State Experiment Station, Geneva, N. Y.

Three members were made Fellows of the American Society of Agronomy at the meetings held in Washington, D. C., November 20 and 21:

Dr. J. A. Bizzell, Professor of Soil Technology, Cornell University, Ithaca, N. Y.

Dr. F. S. Harris, President, Brigham Young University, Provo, Utah.

Dr. W. P. Kelley, Proffesor of Agricultural Chemistry, University of California, Citrus Experiment Station, Biverside, Calif.

ADMINISTRATIVE NOTES

Leaves of Absence - Nonpay Status

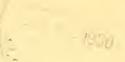
Hereafter, employees under any department or office subject to the provisions of the leave acts of March 15, 1898, 30 Stat. 316, July 7, 1898, 30 Stat. 653, and February 24, 1899, 30 Stat. 890, may not be granted annual or sick leave of absence with pay at the beginning of a calendar, or other leave, year immediately following a period of absence in a nonpay status in the preceding year, unless and until there has been a return to duty.

Travel Expense Vouchers--False Statements--Violation of Oath of Office

Where an employee makes false statements as to certain items in his claim for reimbursement of expenses incurred, leaving doubt as to just what expenses were actually incurred, the entire claim will be disallowed. The presentation by an employee of a falsified travel expense account constitutes a violation of his oath of office and thereby works a forfeiture of all accrued and unpaid travel expenses incurred by him in connection with the duties of the position he held under such oath.

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CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22 December 15, 1930 . No. 31
Personnel (Dec. 1-15) and Field Station (Nov. 16-30) Issue

PERSONNEL ITEMS

Mr. C. C. Fifield, associate baking technologist, left on December 13 for Minneapolis, Minn., to study equipment and methods used in the experimental manufacture of semolina and macaroni. Mr. Fifield will be away from Washington about 3 weeks.

VISITORS

Dr. Vincent F. Peterson, of 2307 Alden St., St. Paul, Minn., plant pathologist of the Rossler Hasslacher Co., 10 E. 40th St., New York City, with factory at Perth Amboy, N. J., was an Office visitor on December 5.

The following were among the visitors in the Office at the time of the meetings of the American Society of Agronomy in November:

Mr. C. B. Cross, assistant professor of field crops and assistant cerealist, Ohlahoma Agricultural Experiment Station.

Mr. E. A. Lods, Macdonald College, Quebec.

Dr. H. B. Sprague, agronomist, New Jersey State Agricultural Experiment Station.

MANUSCRIPTS AND PUBLICATIONS

- 98 An abstract of a manuscript entitled "The Relation of Weather to the Development of Stem Rust, <u>Puccinia graminis</u>," by <u>H. B. Humphrey</u>, was approved on December 3 for submittal to the Proceedings of the Washington Academy of Sciences.
- 99 An article entitled "Observations of an American Scientist in Russia," by J. G. Dickson was approved on December 6 for publication in the American Bankers' Journal, American Bankers' Association, and Scripps Howard Newspaper Alliance. Dr. Dickson presented the paper before the American Bankers' Association at South Bend, Ind., on December 4.
- Ill. Agr. Expt. Sta. Bul. No. 354 entitled "Corn Diseases in Illinois," by Benjamin Koehler and James R. Holbert, bearing date of September, 1930, was received in November.

Farmers' Bulletin No. 1650 entitled "Flaxseed Production by Power Farming Methods in the Northern Great Plains," by <u>A. C. Dillman</u> and <u>E. A. Starch</u>, was received from the Government Printing Office on December 3, bearing date of November, 1930.

The article entitled "Physiologic Specialization and Mutation in Phlyctaena linicola Speg.," by H. A. Rodenhiser, appears in Phytopathology 20 (12): 931-942, figs. 1-4. December, 1930.

The article entitled "Stripe Rust (<u>Puccinia glumarum</u>) on Wheat in Argentina," by <u>H. B. Humphrey</u> and <u>R. O. Cromwell</u>, appears in Phytopathology 20(12): 981-986. December, 1930.

The article entitled "The Cutlook for Hybrid Corn in Indiana," by John F. Trost, appears in the Thirtieth Annual Report of the Indiana Corn Growers! Association, p. 47-50. 1930. (Cooperation between the Office of Cereal Crops and Diseases and the Purdue University Agricultural Experiment Station.)

U. S. Dept. Circ. 141 entitled "Hardiness and Yield of Winter-Wheat Varieties," by <u>Karl S. Quisenberry</u> and <u>J. Allen Clark</u>, was received from the Government Printing Office on December 13, bearing date of December, 1930.

FIELD STATION COLDITION AND PROGRESS

(All experiments except those conducted at the Arlington Experiment Farm, Rosslyn, Va., are in cooperation with State agricultural experiment stations or other agencies.)

HUMID ATLANTIC COAST AREA (South to North)

GEORGIA

State College of Agriculture, Athens (Cereal Agronomy, R. R. Childs)

VIRGINIA ·

Arlington Experiment Farm, Rosslyn (Small Grain Agronomy, J. W. Taylor)

Arlington Experiment Farm, Rosslyn (Corn Breeding, F. D. Richey)

Arlington Experiment Farm, Rosslyn (Cereal Smuts, V. F. Tapke, Acting in Charge)

Arlington Experiment Farm, Rosslyn (Virus Diseases, H. H. McKinney)

NEW YORK

Cornell University Agricultural Experiment Station, Ithaca (Cereal Breeding, H. H. Love)

HUMID MISSISSIPPI VALLEY AREA (South to North)

LCUISIANA

Rice Experiment Station, Crowley (Rice Agronomy, J. M. Jenkins) (Dec. 9)

Weather conditions in November were about normal. Temperatures were somewhat higher than those of last November; however there was ice about a week earlier. The minimum temperature was 31° F., on the 25th. This was the date of the first ice of the season. Last year the lowest temperature in November was on the 30th., which was the date of the first ice.

The total precipitation for November this year was 4.33 inches. There was only one heavy rainfall--2 inches on the 30th. The remainder of the precipitation was distributed over 13 days. Last year the total precipitation for November was 14.92 inches, recorded on 14 days. The 20-year average precipitation for November is 4.40 inches.

Farmers took advantage of the good weather of the first week in November and made rapid progress in their threshing operations. Very little was done during the remainder of the month; however, only a few fields remain unthreshed.

Rice prices are very unsatisfactory, and even at the low prices there is little demand except for long-grain varieties.

Threshing and recleaning rice from the large plots, and recleaning and harvest of soybeans have been completed.

Agricultural Experiment Station, Baton Rouge (Corn Breeding, H. F. Stoneberg)

TENNESSEE

Agricultural Experiment Station, Knoxville (Corn Breeding, L. S. Mayer)

ARKANSAS

Agricultural Experiment Station, Fayetteville (Rice Diseases, E. C. Tullis)

MISSOURI

Agricultural Experiment Station, Columbia (Rice Agronomy, B. M. King)

Agricultural Experiment Station, Columbia (Cereal Agronomy, L. J. Stadler)

OHIO

Agricultural Experiment Station, Wooster (Corn Investigations, G. H. Stringfield)

IOWA

Agricultural Exceriment Station, Ames (Oat Breeding, L. C. Burnett)

Agricultural Experiment Station, Ames (Corn Breeding, M. T. Jenkins)

Agricultural Experiment Station, Ames (Crown Rust of Cats, H. C. Murphy)

ILLINOIS

Funk Bros. Seed Co., Blocmington (Corn Root, Stalk and Ear Rots, J. R. Holbert)

INDIANA

Purdue University Agricultural Experiment Station, LaFayette (Corn Rots and Metallic Poisoning, J. F. Trost, Acting in Charge)

Purdue University Agricultural Experiment Station, LaFayette (Leaf Rusts, R. M. Caldwell)

WISCONSIN

Agricultural Experiment Station, Madison (Wheat Scab, J. G. Dickson)

MINNESOTA

Southeast Experiment Station, Waseca (R. E. Hodgson) [Nov. 15]

Yield and test weight per bushel obtained from spring-wheat varieties grown in triplicate plot experiments at the Southeast Experiment Station, Waseca, 1930

, 33	C.I.	Stem Rust	Yield	Test Weight
Class and Variety	No.	(Per cent)	(Bu. per acre)	(Lbs.)
Hard Red Spring				
Double Cross, Minn. 2305	10005	6	29.9	60
Double Cross, Minn. 2315	10020	T	28.5	57
Double Cross, Minn. 2316	10021	1	28.5	58
Double Cross, Minn. 2302	10002	T 3 T	28.3	60
Kota x Marquis 1656.85	8385	3	28.3	57
Double Cross, Minn. 2303			27.7	56
Ceres	6900	17	27.3	58
Double Cross, Minn. 2304	10004	3	27.0	57
Marquis	3641	47	25.8	56
Marquillo	6887	1	24.5	53
Kota x Marquis 1656.48	10014	1 2 3	24.3	55
Kota x Marquis 1656	6898		23.8	56
Reliance	7370	57	22.9	53
Marquis x Emmer, H-44	8177	T	22.8	53 54
Reward	8182	47	22.4	57
Hope	8178	T	22.1	53 48
Supreme	8026	67	18.9	48
Danaman				
<u>Durum</u> Mindum	E206	É	77 1	61
Kubanka	5296 1440	T	33.1 30.8	
Nodak	6519	7	28.4	57 57
Notan	U) 19	1	20·4	57

Agricultural Experiment Station, University Farm, St. Paul (Wheat Breeding, E. R. Ausemus)

Agricultural Experiment Station, University Farm, St. Paul (H. K. Wilson) Nov. 15

The following results were obtained from the cooperative varietal experiments with spring wheat in Minnesota in 1930. Stem rust was first observed at University Farm, June 25, 1930, but at Crookston not until July 10. Rust was least severe at University Farm and most severe at Morris.

Yield, percentage of stem rust, and test weight per bushel obtained from spring-wheat varieties grown in triplicate plots at University Farm, 1930.

Class and Variety	C.I.	Stem Rust (Per cent)	Yield (Bu. per acre)	Test Weight (Lbs.)
Double Cross, Minn. 2315 Ceres Double Cross, Minn. 2303 Double Cross, Minn. 2316 Haynes Bluestem Double Cross, Minn. 2302 Double Cross, Minn. 2304 Marquillo Marquis x Emper, H. 44 Kota x Marquis 1656.85 Double Cross, Minn. 2305 Kota x Marquis 1656.48 Kota x Marquis 1656.48	6900 10003 10021 2574 10002 10004 6887 8177 8385 10005 10014	10 3 0 2 0 0 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0	28.1 27.6 27.5 26.8 26.6 26.6 25.6 25.6 25.6 25.6 25.2 24.7 24.2 24.2 24.2 24.2 24.2 24.2 24	56 91 0 0 6 6 5 5 5 5 5 5 5 6 0 6 3
Durum Mindum Kubanka Nodak	5296 1440 6519	0 0 0	2 ¹ 4.1 23.9 23.5	61 58 60

Agricultural Experiment Station, University Farm, St. Paul (Flax Rust, C. C. Mlison)

Agricultural Experiment Station, University Farm, St. Paul (Stem Rust, E. C. Stakman) (M. N. Levine)

West Central Experiment Station, Morris (R. O. Bridgford) [Nov. 15]

Yield, percentage of stem rust, and test weight per bushel obtained from spring-wheat varieties grown in triplicate plots at the West Central Experiment Station, Morris, 1930

Class and Variety	C.I.	Stem Rust (Per cent)	Yield (Bu. per acre)	Test Weight (Lbs.)
Hard Red Spring Double Cross, Minn. 2315	10020	T	34.5	61
Reliance	7370	30	33.9	59
Double Cross, Minn. 2303 Double Cross, Minn. 2304		T	33•9 33•8	60 59
Marquillo Sel. 43		${f T}$	33.4	
Double Cross, Minn. 2305 Marguillo	10005 6887	T	33•3 32•4	62 59
Double Cross, Minn. 2302	10002	T	32.2	62
Marquis x Emmer, H-44 Double Cross, Minn. 2316	8177 10021	T	31.9 31.3	58 60
Ceres	6900 3641	Ψ 5	30.6	61
Marquis Supreme	8026	25 75	29•5 28•3	60 57
Kota x Marguis 1656.48 Kota x Marguis 1656	10014 6898	T T	27.0 26.9	59 60
Kota x Marquis 1656.85	8385	T	26.4	60
Hope Reward	8178 8182	7 T 10	25.8 23.2	57 63
	0102	10	<i>-)•-</i>	٥
Durum Mindum	5296	0	32.4	63
Nodak	6519	0	27.1	60
Kubanka	1440	0	23.5	60

Northwest School and Station, Crookston (R. S. Dunham) [Nov. 15]

Yield, percentage of stem rust, and test weight per bushel obtained from spring-wheat varieties grown in triplicate plots at the Horthwest School and Station, Crookston, 1930

	£			
Class and Variety	C.I.	Stem Rust	Yield	Test Weight
	No.	(Per cent)	(Bu. per acre)	(Lbs.)
Hard Red Spring				
Double Cross, Minn. 2503	10003	${\mathbb T}$	34.4	62
Reliance	7370	27	34.2	63
Double Cross, Minn. 2304	10004	1	34.1	63
Double Cross, Minn. 2315		5 3	33.9	63
Double Cross, Minn. 2305			33.8	63
Supreme	3026	53 43	33.2	62
Marquis	3641		33.0	63
Kota x Marquis 1656.85			33.0	62
Double Cross, Minn. 2316	10021	10	32.9	63
Marquillo	6887	71	32.7	61
Double Cross, Minn. 2302		T	32.2	63
	8177	T	31.5	61
Ceres	6900	12	- 31.0	62
Hope	8178		29.6	60
Kota x Marquis 1656	6898	9	29.4	62
Kota x Marquis 1656.48	10014	2	27.8	63 64
Reward	8182	7	27.4	64
D				
Durum		_		<i>c</i> -
Mindum	5296	. Т	35.7	65 64
Nodek	6519	<u>~</u>	35.1	
Kubanka	1440	<u> </u>	33.9	64

GREAT PLAINS AREA (South to North)

TEXAS

Substation No. 6, Denton (Wheat Improvement, I. M. Atkins)

OKLAHOMA

Southern Great Plains Field Station, Woodward (Grain Sorghum and Broomcorn, J. B. Sieglinger)

Southern Great Plains Field Station, Woodward (Wheat Improvement, Edmund Stephens)

KANSAS

Agricultural Experiment Station, Manhattan (Cereal Breeding, J. H. Parker)

Agricultural Experiment Station, Manhattan (Corn Breeding, A. M. Brunson)

Agricultural Experiment Station, Manhattan (Wheat Foot Rots, Hurley Fellows)

Agricultural Experiment Station, Manhattan (Wheat Leaf Rust, C. O. Johnston)

Fort Hays Branch Experiment Station, Hays (Cereal Agronomy, A. F. Swanson) (Dec. 3)

November ended with the fourth highest precipitation record for that month in a period of 63 years, the amount being 2.63 inches. Wheat is therefore in excellent condition to go into the winter, so that the prospects for winterkilling will be remote.

The field work for the year is about completed. Sorghums and corn have been threshed and shelled. Yields for the 1930 report are being compiled. The pasturing experiment on winter wheat is being continued on both sown and volunteer plots, as well as on plots seeded early in September and on October 1. In former years beneficial results have been obtained when the vegetative growth has been rank. Wheat in most of western Kansas is abundant this fall and much pasturing is being done. Thousands of sheep have been brought into the State to be pastured on wheat. These sheep are run in herds of from 2,500 to 3,000, each herd being constantly under the care of experienced sheep herders.

The new office building is progressing rapidly. The building will be of brick and concrete, entirely fireproof, and modern in all respects. All of the State employees will have offices on the first floor. All of the Federal employees will be on the second floor. Natural gas is being extended out to the campus this week from the city of Hays and will be available for all of the buildings and cottages on the station where fuel is needed.

· COLCRADO

United States Dry-Land Field Station, Alaron (Wheat Improvement, J. J. Curtis)

United States Dry-Land Field Station, Akron (Grain Sorghums) (J. F. Brandon, J. J. Curtis) (Nov. 24)

Yield of grain sorghum varieties grown at the United States Dry-Land Field Station, Akron, Colo., 1930

<u>Variety</u>		(Bu. per acre) Av. 2 plots grain stubble	Av. of
Yellow kafir, C.I. 902 Kafir Selection No. 6 Dwarf Freed Pink Freed (Tribune 14) Dwarf hegari, C.I. No. 620 Modoc Pink Freed, H.C., 2520 Custer milo Early White milo, F.C.I. 5886 Dwarf feterita x milo x kafir, H.C.301 Freed sorgo, F.C.I. 9033 Early Pink kafir, F.C.I. 9089 Extra Early Pink kafir Elton sorgo Sooner milo Milo x hegari, H.C.282 Dwarf Yellow milo Hybrid Dwarf feterita No. 1, C.I.867 Pink Freed (Tribune 36) Dawn kafir Selection, H.C. 2421	61.0 55.1 55.1 50.7 49.6 41.5 41.5 41.5 41.5 41.5 41.5 41.5 41.5	56.8 57.9 45.1 45.1 45.1 40.2 45.1 40.2 45.7 40.2 45.7 40.2 45.7 40.3 41.7 40.3 41.7 40.8 41.7 40.8 41.7 40.8 41.7 40.8 41.7 41.7 41.7 41.7 41.7 41.7 41.7 41.7	58.9 56.2 59.5 49.1 46.8 49.9 44.1 49.7 39.1 41.1 39.7 37.1 37.1 37.1 37.1 37.1 37.1 37.1

	Yield				
<u>Variety</u>		(Bu. per acre)			
b	Av. 2 plot	s Av. 2 plots	Av. of 4		
	fallow	grain stubble	plots		
Mafir (Selection No. 10)	32.9	29.4	31.2		
Coes sorgo	28.9	26.5	27.7		
Sunrise kafir, C.I. 472	28.0	26.6	27.3		
Otis kafir	27.3	25.9	26.5		
Club kafir	25.9	26.9	26.4		
Standard feterita, 182-1	29.9	22.7	26.3		
Blackeyed Coes sorgo	23.9	23.1	23.5		
Early Dwarf milo (480 x 332-7-7)	21.6	16.3	19.0		
Manchu Brown kaoliang	, 11.5	12.9	12.2		
Freed sorgo x C.I. 71 Blackhull hafi	$r^{1}/8.6$	9.8	9.2		
A CONTRACTOR OF THE CONTRACTOR					

^{1/} Grown on only 1 plot of fallow and on 1 plot of small grain stubble.

Grohoma was grown on a fallow plot located at some distance from the other varieties and yielded 52.9 bushels per acre. Grohoma was seeded and emerged 11 days earlier than other varieties. Seed was not available for including it in the general forage variety experiment.

NEBRASKA

North Platte Substation, North Platte (Cereal Agronomy, N. E. Jodon)

Agricultural Experiment Station, Lincoln (Wheat Improvement, C. A. Suneson)

SOUTH DAKOTA

United States Field Station, Redfield (Wheat Improvement, E. S. McFadden)

NORTH DAMOTA

Northern Great Plains Field Station, Mandan (Cereal Agronomy, V. C. Hubbard) (Dec. 3)

Two heavy snowstorms, the first starting on November 19, and several other light snowfalls have afforded a very desirable protection for winter wheat. A total of 11 1/2 inches of snow has been recorded to date. Most of this has melted, though there still is a fair covering on fields not too exposed to a clear sweep of the wind.

Northern Great Plains Field Station, Mandan (Flax Breeding, J. C. Brinsmade, Jr.) (Dec. 2)

A period of cold, windy, snowy weather in the last half of November followed the clear, mild weather of the first half of the month. There was no precipitation during the first half of November. In the last half, snow fell on 7 of the 15 days and covered the ground to a depth of over 10 inches on the level. In exposed locations the snow piled up in drifts which greatly impeded traffic.

Snow is falling again today and may be expected to continue for some time because a northeast wind generally presages continued precipitation.

The maximum temperature in November was 67° on November 3, the minimum was 4° on November 24; precipitation 1.13 inches. Fotal precipitation for the first eleven months of 1930 was 17.25 inches which is .40 of an inch more than the average annual precipitation for the last 55 years.

The last harvest in the after-ripening-loss experiment was made November 15. The regular nursery threshing was also completed on that date. Threshing selections was completed November 22.

The only significant loss of seed in the after-ripening-loss experiment occurred during the period from October 1 to 15, a period of continuous wet weather with a recorded precipitation of 1.85 inches. The average yield of seven varieties grown in triplicate from rows harvested September 30 was 14.8 bushels per acre. The average yield of the same varieties from rows harvested October 15 was 8.7 bushels.

Yields and disease infection of varieties grown in 3-row plots of 5-foot rows in triplicate in the uniform flax nursery are shown in the following table.

Wilt and rust infection and acre yield of 7 flax varieties grown in 3-row plots of 5-foot rows in triplicate in the uniform flax nursery on flax-sick and on uninfested soil at Mandan, N. Dak., 1930

<u>Variety</u>	C. I. <u>No.</u>	Wilt (Per cent)	Percent Ru Preva- lence			yield of 9 rows Uninfested soil
Redwing Winona Linota N. D. R. 114 Buda Bison Rio	320 427 244 489 326 389 280	58 45 39 36 18 7 15	100 100 100 100 100 100	60 75 70 80 15 10	0.3 1.4 1.5 1.6 4.1 3.7 2.9	6.1 8.6 6.9 5.9 7.7 7.7

Dickinson Substation, Dickinson (Cereal Agronomy, R. W. Smith) (Dec. 1)

The approach to winter temperatures has been rather gradual in November, the maximum temperature being 72 degrees on the 8th and the minimum 2 degrees on one morning last week. Below-zero temperatures have been reported from a few places in the State, together with considerable snowfall. However, the principal snowfall here was about 3 or 4 inches which has nearly all melted, leaving the ground almost bare at the end of the month. The total precipitation for the month was slightly below the normal, which is about half an inch.

The minimum soil temperature at a depth of 2 inches as shown by the soil thermograph in the winter nursery, was 19 degrees. During the last week in the month the soil temperature dropped rather steadily from 29 to 19 degrees.

Smut percentages obtained from part of the varietal smut nursery in 1930, together with annual and average smut data for the 5-year period, 1926 to 1930, are presented in the accompanying table.

Annual and average percentages of smutted heads in spring-wheat varieties grown from bunt-inoculated seed on the Dickinson Substation from 1926 to 1930, inclusive.

Variety			es of sm	mutted 1	neads	Av.
	1925	1927	1928	1929	1930	
Hard Spring (Grown for 5	years)					
Turkey x Florence G334	0	0	0	0	2	0.4
Quality	1 6	15	12	g	2 5	8
Marquillo		20	7	6	12	10
Reliance	12	22	24	6	11	15
Garnet	0	26	31	15	18	18
Marquis (Av. checks)	7†	21	24	27	36	22
Red Fife	3 1	5,4	26	26	37	23
Haynes	ĺ	32	25	34 43	32	25
Ruby	1	27	31	43	39	28
Preston	1 5 7	35	24	37	60	33
Power	7	30	41	37 44		35
Reward	Ö	36	61	34	51 143	35 35
Marquis x Kota 1656.84	1		53	34 42	38	37
Marquis x Kota 1656.97	g	51 66	53 46	41	61	37 44
Ceres (Av. checks)	22	51	63	59	61	51
Kota	21	55	74	52	76	56
Ulka No. 1	84	84	77	84	95	85
(Grown for 4			11		22	
Hope		tr	1	0	0.5	0.4
Reliance Sel. 7		1	5 5 26	21	8	9
Aminster		7	Ę	14	g	9
Kota x Kanred Bll-1-1		9	26	10	33	20
Reliance Sel. 16		18	18	12	15	16
Reliance Sel. 22		15	16	18	17	17
Reliance Sel. 64		11	18	37	27	23
Kanred x Marquis B9-11-5	0	17	27	24	32	25
Kanred x Marguis B9-14-4	2	35	39	32	53	710
Hurdsfield		17	42	32 45	62	42
Supreme		21	46	45	60	143
			, 0	,)		')

Variety	Percentages of smutted heads					Av.
	1926	1927	1928	1929	1930	
Durum						
Mondak	0	19	7	2	2	6
Akrona	0	13	12	4	1	6
Mindum	3.	9	11	10	7	8
Monad	5	19	14	13	15	13
Kubanka C.I. 1440	Ö	13	8	7	42	14
Nodak	9	17	7	9	34	15
Kubanka Sel. 132		14	6	51	- 6	
Kahla	0	22	6	1		900 000

Agricultural Experiment Station, State College Station, Fargo (Flax Diseases, L. W. Boyle)

Langdon Substation, Langdon (Wheat Improvement, G. S. Smith)

MONTANA

Judith Basin Branch Station, Moccasin (Cereal Agronomy, J. L. Sutherland)
Nov. 21

Clear weather with moderate temperature prevailed during the first 11 days of this month. The second snowstorm of the season started on the 12th and lasted until the 14th. Approximately five inches of snow fell, amounting to 0.45 of an inch of precipitation. The maximum temperature was 70°; minimum, -11°.

Karmont winter wheat was seeded at four rates on November 11 in the rate-and-date-of-seeding experiment. Wheat seeded on October 6 emerged November 10, and later seedings have not made their appearance.

The yields of oat and barley varieties grown in four 1/50-acre plots at the Judith Basin Substation in 1930 are shown in the following tables.

<u>Oats</u>	C. I. <u>No</u> .	Yield (Bu. per acre)
Selection Alexander Sixty-Day Markton Victory Iogold Swedish Select Silvermine Selection	357-168 1592 165 2053 7 ¹ 42 2329 13 ¹ 4 71 ¹ 4 357-112	34.2 33.2 32.8 32.6 32.6 31.9 31.3 31.1
Barley		
Coast Horn Trebi Hurst White Smyrna Hannchen Sel. 1 Meloy Sel. 3 Arequipa Composite Cross (New) Mechanical Mixture Hannchen Himalaya Faust Composite Cross	690 926 936 1304 195 5462 4656 1256 5461 4115 531 620 4579 4116	20.5 19.9 19.4 19.4 19.3 19.1 19.1 17.7 17.7 16.3 16.1 15.6

Morthern Montana Branch Station, Havre (M. A. Bell) (Dec. 1)

The flax varietal project consisted of 8 varieties grown in triplicated 1/30-acre plots on dished corn ground, seeded May 19 with a double dish drill equipped with a press wheel attachment.

All plots emerged May 28 with uniform stands and promised excellent yields until July, when the crop succumbed to the drought, ripening rather prematurely during the first week of August. Heat canker was especially bad in Reserve, Bison, and Linota, reducing the stand in these varieties to an appreciable extent. Newland, Stark, and Red Wing were not affected to any degree. Acre yields ranged from 3.2 bushels for Newland to 1.8 for Buda.

Acre yields of 8 varieties of flax grown in triplicated 1/30-acre plots on disked corn ground at Havre, 1930.

Date of seeding May 19

Variety	C. I. No.	Height (inches)	Yield (Bu. per acre)	Test Weight (Lbs.)
Newland Redwing Reserve Stark Argentine (Commercial) Bison Linota Buda	188 499 19 185 488 389 244 326	15 14 13 16 10 16 15	3.2 2.9 2.9 2.7 2.6 2.4 2.1	54 53 53 53 53 52 55 54

Average agronomic data recorded on 18 oat varieties grown in triplicate 1/50-acre plots on fallow at the Northern Montana Branch Station, Havre, 1930.

Variety	C. I. No.	Date ripe	Yield (Bu. per acre)	Test Weight (Lbs.)
Idamine Selection 173 Silvermine Green Russian Selection 172 Havre 4 (Banner type) Anthony Golden Rain Swedish Select Markton Gopher Iogold Victory2/ Kherson Gerlach Upright Banner White Russian	183 ⁴ 357 659 23 ⁴ 3 357 21 ⁴ 3 493 13 ⁴ 2053 2027 2329 560 459 22 ⁴ 4 21 ⁴ 2 1997 551	July 25 July 25 July 25 July 30 July 26 July 30 July 28 July 27 July 26 July 26 July 22 July 22 July 29 July 29 July 29 July 30 Aug. 1	36.5 33.8 32.8 32.3 31.8 30.7 30.2 39.7 29.7 29.7 28.7 27.1 26.0 26.0 25.5 16.2	333476 3335333333333333333333333333333333333

a/ Badly infected with smut.

WESTERN BASIN AND COAST AREAS (North to West and South)

IDAHO

Aberdeen Substation, Aberdeen (Cereal Agronomy, L. L. Davis)

Agricultural Experiment Station, Moscow (Wheat Improvement, V. H. Florell) (Nov. 22)

The ground is now covered with about four to six inches of snow. The weather is milder than it has been, so that it is possible the snow will be gone before very long. The experimental seedings of winter wheat did not emerge before the snow came.

Agricultural Experiment Station, Moscow (Stripe Rust, C. W. Hungerford)

WASHINGTON

Agricultural Experiment Station, Pullman (Cereal Breeding, E. F. Gaines) (W. K. Smith)

Agricultural Experiment Station, Pullman (Stinking Smuts of Wheat, H. H. Flor)

OREGON

Sherman County Branch Station, Moro (Cereal Agronomy, D. E. Stephens)

Agricultural Experiment Station, Corvallis (Foot Rots of Wheat, Roderick Sprague)

UTAH

Agricultural Experiment Station, Logan (Wheat Improvement, R. W. Woodward)

CALIFORNIA

Biggs Rice Field Station, Biggs (Rice Agronomy, J. W. Jones)

University Farm, Davis (Cereal Agronomy, G. A. Wiebe) (Dec. 9)

Average acre yield of wheat varieties grown in replicated plots at University Farm, Davis, Calif., 1930

Variety	C. I. No.	Yield (Bu. per acre)
Ramona Poso Escondido White Federation Hard Federation Duro Montezuma Baart Hard Baart Capay Federation Bunyip Onas Alto Hard Federation Sel. Pacific Bluestem Little Club	8241-1 8891 8240 4981 4733 8242 8892 1697 8274 8223 4734 5125 6221 8893 8255 4067	83.6 74.6 71.0 70.2 69.4 66.0 63.4 63.4 63.4 63.4 63.0 68.4 56.0 56.0 25.6

Stem rust was the most important factor in reducing yields, Little Club and Pacific Bluestem being the most severely infected.

Average acre yield of barley varieties grown in replicated plots at University Farm, Davis, Calif., 1930

Variety	C. I. No.	Yield (Bu. per acre)
Sacramento Vaughn Selection Vaughn Selection Paso Vaughn Atlas Hero Blanco Archer Coast Tennessee Winter	4108 1367-2 1367-1 5047 1367 4118 1286-1 5045 1031 690 257	118.2 110.4 108.8 108.6 107.8 99.6 97.0 92.8 90.6 87.0
Club Mariout	261	72.0

ARIZONA

Agricultural Experiment Station, Tucson (Cereal Agronomy, A. T. Bartel)



CEREAL COURIER

Official Messenger of the Office of Cereal Crops and Diseases Bureau of Plant Industry, U. S. Department of Agriculture (NOT FOR PUBLICATION)

Vol. 22

December 31, 1930 Personnel (Dec. 16-31) and General Issue No. 32

PERSONNEL ITEMS

Mr. Sidney R. Snider was appointed junior chemist, effective December 16, to fill the position formerly occupied by Mr. Reed Walker. Mr. Snider will be located in the research laboratory of the Bureau of Agricultural Economics. His duties will be to determine the crude-protein content and gasoline color values of wheat samples from nursery experiments and inheritance studies of the western wheat investigations project in connection with breeding for disease resistance, yield, and quality.

Mr. A. F. Swanson, associate agronomist in charge of the cooperative cereal investigations at the Fort Hays Branch Experiment Station, Hays, Kans., has been authorized to go to the Kansas Agricultural Experiment Station, Manhattan, to prepare reports and manuscripts on cooperative cereal experiments conducted at Hays and outlying points. Mr. Swanson will be at Manhattan until about March 1.

VISITORS

- Mr. T. R. Allen, a farmer, of Delavan, Ill., was an Office visitor on December 18.
- Mr. E. A. Lungren, of the Colorado State Agricultural College, was an Office visitor on December 29.

MANUSCRIPTS AND PUBLICATIONS

- 100 A manuscript entitled "The Distribution of Cereal Footrots in the Pacific Northwest," by Roderick Sprague, was approved on December 16 for publication in "Northwest Science." Dr. Sprague presented the paper on December 29 at the meeting of the Northwest Scientific Association in Spokane, Wash.
- 101 A manuscript entitled "Morphologic and Physiologic Studies on Stem-Rust Resistance in Cereals," by Helen Hart, was submitted on December 19 for publication in the Technical Bulletin series.
- 102 An abstract of a manuscript entitled "Estimating Nutrient Needs of Corn by Stalk Tests," by John F. Trost, was approved on December 29 for presentation at the meetings of the American Association for the Advancement of Science in Cleveland.

Page proof of Technical Bulletin 218 entitled "Inheritance of Winter Hardiness, Growth Habit, and Stem-Rust Reaction in Crosses between Minhardi Winter and H-44 Spring Wheats," by <u>Karl S. Quisenberry</u>, was read on December 31.

Circular 133 entitled "Methods of Eradicating Buckthorn (Rhamnus) Susceptible to Crown Rust (<u>Puccinia coronata</u>) of Oats," by <u>S. M. Dietz</u> and <u>L. D. Leach</u>, has just been received from the Government Printing Office. (The investigations reported in this Circular were conducted cooperatively by the Office of Cereal Crops and Diseases and the Iowa Agricultural Experiment Station.)

The following articles by members of the Office staff appear in the December number of the Journal of the American Society of Agronomy:

Clark, J. Allen. Registration of Improved Wheat Varieties, V. Jour. Amer. Soc. Agron. 22(12): 1041-1042. December, 1930.

Martin, John H. The Comparative Drought Resistance of Sorghums and Corn. Jour. Amer. Soc. Agron. 22(12): 993-1003. December, 1930.

McFadden, Edgar S. A Successful Transfer of Emmer Characters to Vulgare Wheat. Jour. Amer. Soc. Agron. 22(12): 1020-1034. December, 1930. (Cooperative investigations between the Office of Cereal Crops and Diseases and the South Dakota Agricultural Experiment Station.)

ADMINISTRATIVE NOTES

Travel !!emorandum

There has been a marked increase in the proportion of appropriated funds used for travel purposes during the past several years. Recognizing the necessity of some travel in the efficient conduct of work, Department administrators at the same time insist that we must give more consideration to travel expenditures. We are being checked up constantly on letters of authorization and travel expenditure items, and to protect the Office and individuals it seems necessary to call attention to specific matters which must be taken into account in official travel.

No trip should be requested which is not entirely justified by the necessities or welfare of the individual's official work. Needless duplication of travel within projects should be avoided, and every effort should be made through cooperation between projects and individuals to avoid needless duplication. In the case of field men, authorization for travel in certain areas is issued in connection with annual letters of authority. Travel under this authorization should be just as carefully considered for its necessity as any other. This travel is authorized as a necessary part of the individual's work, and any other travel without specific notification and approval is not justifiable. Travel authorization in an annual letter is a convenience based on a definite obligation. If this obligation is not recognized by the individual in ordering his travel, the convenience must be rescinded.

One of the most serious problems in connection with official travel is concerned with the use of personally-owned automobiles. It is recognized that ousiness is expedited by using automobiles under certain circumstances. It also is recognized that in view of the impossibility of supplying Government-owned machines to all employees, it is justifiable to permit some official travel in personally-owned cars. When such travel is based on a real need, and this need and its attendent circumstances are clearly presented, there should be no difficulty in obtaining its authorization.

Unfortunately, however, there are a number of factors concerned with the use of personally-owned automobiles, which seriously complicate this method of travel. It is rather easy to take trips by auto, and before one realizes it he may be taking trips hard to justify on the basis of necessity. Even necessary official travel often seems unnecessary to an outsider. It may appear to the man on the street that an individual is using his personally-owned car at public expense for personal profit or pleasure. No trip should be taken that is not completely defendable on the grounds of public welfare and efficiency, but especial thought should be given to travel in one's own car. When the situation is complicated by the fact that the man on official duty is accompanied by members of his fame, there are certainly grounds for a questioning public attitude.

The matter of combining official travel and travel with members of one's family may be justifiable in some circumstances. It is not well to make sweeping rules prohibiting it entirely. On the other hand, such travel is always subject to outside criticism. It also is conducive to the development of laxity in official obligations to a degree that is dangerous. There is every temptation for an insidious creeping in of personal interests to interfere with official obligations when official business and travel with family are combined. There also is danger that in such cases even the need for the official travel may be questioned, it being very likely that the trip will be interpreted as primarily for personal reasons. This is especially true when there is an accompanying request for annual leave in connection with such travel.

In attendance at scientific meetings at official expense, there also is a serious question as to how much one should allow the presence of one's family to interfere with the real intent and purpose of the type of official travel. Attendance with expenses paid is justified ally because of the information useful in official duties obtained through attendance. A large part of this information comes from associations before, between, and after sessions. When one is accompanied by members of his family, it is much more difficult, or even impossible, to realize on the value of these contacts. The safest thing is to eliminate family as largely as possible from official travel of any sort, asking for authorization to travel with members of one's family only under circumstances where it can be justified to the fullest possible extent.

There is no desire on the part of either Bureau or Office administrators to be unduly severe or "hard boiled" in handling any of the above mentioned matters. It is an obligation, however, to call attention to the factors which must be given consideration in administrative scanning of travel accounts and requests for travel authorization. The only way to avoid severity in regulations is through the full and complete cooperation of all those undertaking official travel, and your help to that end is requested.

In all cases, be sure that you have complete authority in advance for each and every trip.

NOTICE REGARDING MATERIAL FROM FOREIGN COUNTRIES.

In order to avoid delays at the Inspection House of the Plant Quarantine and Control Administration, it is advantageous for us to arrange through Dr. Kellerman's office in advance, for the clearance of plant disease material sent from foreign sources for identification. Failure to do so may result in such delay that identification becomes impossible.

A memorandum from Dr. Kellerman, Associate Chief of the Bureau, under date of December 2, 1930, reads in part as follows:

"Whenever your office has any material delivered for identification or comparative study from any foreign parts, it is necessary to have the matter brought to my attention if possible before delivery in Washington so the necessary arrangements with the Inspection House for prompt delivery can be made."



